OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

Detailed Subgroup Findings Report: Public Perception of Self-Driving Technology for Long-Haul Trucking and Last-Mile Delivery

RARC Report

Report Number
RARC-WP-17-011-A

September 5, 2017

HOW TO READ THIS REPORT

The U.S. Postal Service Office of Inspector General's (OIG) public opinion research projects are different from other OIG products in that they are designed to be useful to a general audience while also meeting the technical disclosure standards required by the field of survey research.

The content of this survey's reporting is divided across three separate products. Each product has been designed to be readable as a stand-alone report, and can be accessed through the links below:

- Those with interest in national findings on the research topic should focus on the Summary Report.
- Those with interest in in-depth reporting for several relevant subgroups should also review the Detailed Subgroup Findings Report.
- Those interested in the technical details surrounding the collection of the data used for this project should review the Methodology Report.

Most of the slides in the reporting for this survey are designed so that they can be consumed on their own. This way, if someone takes out one slide and shares it, they can understand the findings presented without needing to see the entire report. For that reason, the footnotes found on each slide include important details that might be different from what a general audience is used to seeing, such as notes about any statistical testing that was performed, or the full text of any question whose results are reported on the slide.

General audience members will be most interested in the findings presented at the top of each page of a report. As you move down any given slide, the information presented gets more detailed and technical.

Please see Appendix A for additional guidance on interpreting the detailed data visualizations that are presented throughout this report.

Note: Throughout this report, Amazon.com, UPS, and FedEx are used to identify companies about which survey data was collected. Amazon.com is the registered trademark of Amazon.com, Inc. UPS is the registered trademark of United Parcel Service of America, Inc. FedEx is the registered trademark of Federal Express Corporation. These trademarks and their respective logos are used for identification purposes only and their use is not meant to imply in any way that the registered holders of the trademarks sponsor or endorse this report or the services of the U.S. Postal Service.

METHODOLOGY

The U.S. Postal Service Office of Inspector General (OIG) fielded a confidential online survey targeting a nationally representative sample of 18-75 year-old residents of the 50 United States and the District of Columbia. Respondents were selected from an opt-in Internet panel, solicited by email, and incentivized to complete the survey on the OIG's online survey platform by the sampling services provider Research Now, per their standard sampling procedures. The survey was conducted in English.

Quota sampling procedures were employed during the survey field period in order to improve the representativeness of the data collected. Quotas were employed on age, gender, nativity within ethnicity, race, education, geographic subregion, and ecommerce participation.

With the exception of ecommerce participation, data were weighted prior to analysis according to U.S. Bureau of the Census population estimates on all quota variables, as well as on income and employment status. Ecommerce participation was weighted to reflect a national probability general population telephone survey's results regarding the proportion of Americans that had purchased something online in the previous month. All data and sample sizes in this research's reports are weighted.

Field Dates: April 24 – April 30, 2017

Total Respondents: 2,830

Median Interview Length: 14 minutes 48 seconds

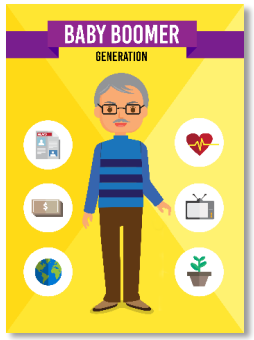
95% confidence interval (National Sample): +/- 1.8%*

Please see the Methodology Report for this project for detailed information regarding the methodology employed for this research.

*This interval is being provided as a benchmark. +/- 1.8% is the size of the confidence interval that would be calculated from a probability sample of n=2,830. Like most online research, this study uses a non-probability sample. The actual interval is likely to be somewhat larger, as other sources of error may also impact findings.

Findings by Segment

Millennials, Generation X, Baby Boomers

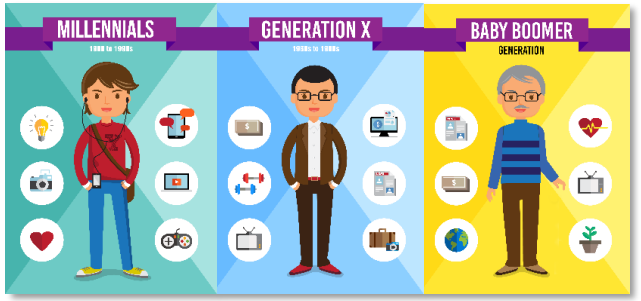


Groups in this section were defined based on responses to the question “S5. What is your age in years?” Millennials were defined as being aged 18-34, Generation X as being aged 35-49, Baby Boomers as being aged 50-75.

SUMMARY OF FINDINGS

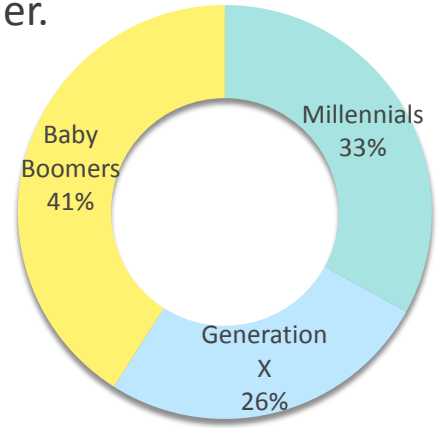
Millennials, Generation X, Baby Boomers

- Millennials like both self-driving long-haul and self-driving delivery trucks more than the older groups.
- With age comes skepticism: Older respondents are less sure about the possible benefits of driverless technology than younger respondents.
- The Postal Service could achieve a large net boost in brand positivity among Millennials if it were to pursue a driverless initiative. There is also a positive effect among Generation X and Baby Boomers, but that effect is smaller.
- Implementing driverless systems into its delivery processes gives the Postal Service's image as an innovative company a large lift among Millennials, but less so among Generation X and Baby Boomers.



Sample Breakdown by

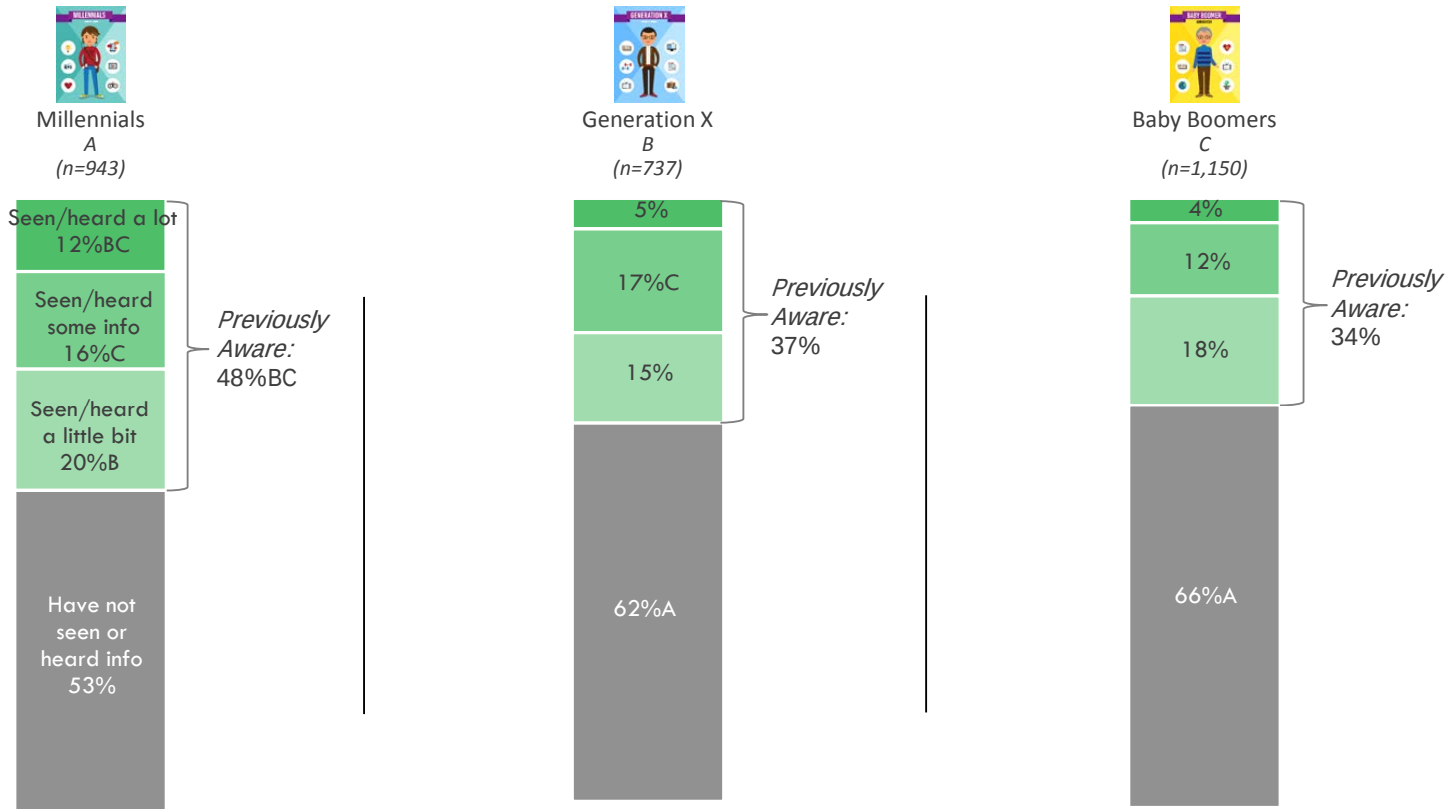
Generation



Groups in this section were defined based on responses to the question "S5. What is your age in years?" Millennials were defined as being aged 18-34, Generation X as being aged 35-49, Baby Boomers as being aged 50-75.

Millennials report having seen or heard more about the concept of transporting mail or packages using self-driving vehicles than either Generation X or Baby Boomers.

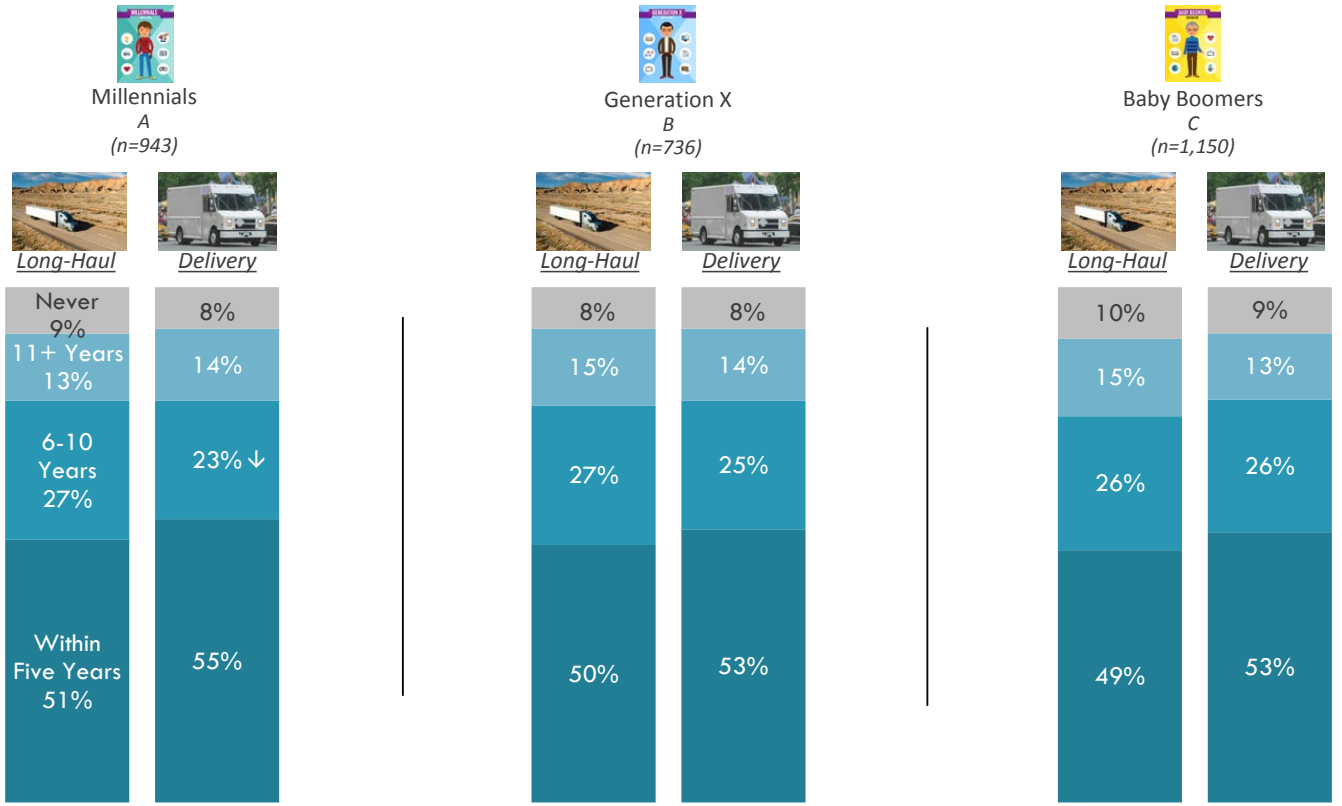
Awareness of Overall Self-Driving Delivery Concept



Question asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts. | Q19. Have you seen or heard anything about organizations considering the use of self-driving vehicles for the transportation of mail or packages in the future? | A,B,C: Significantly higher than corresponding group at 95% c.l.

There is little difference across age groups regarding their expected timing for the self-driving long-haul and delivery concepts.

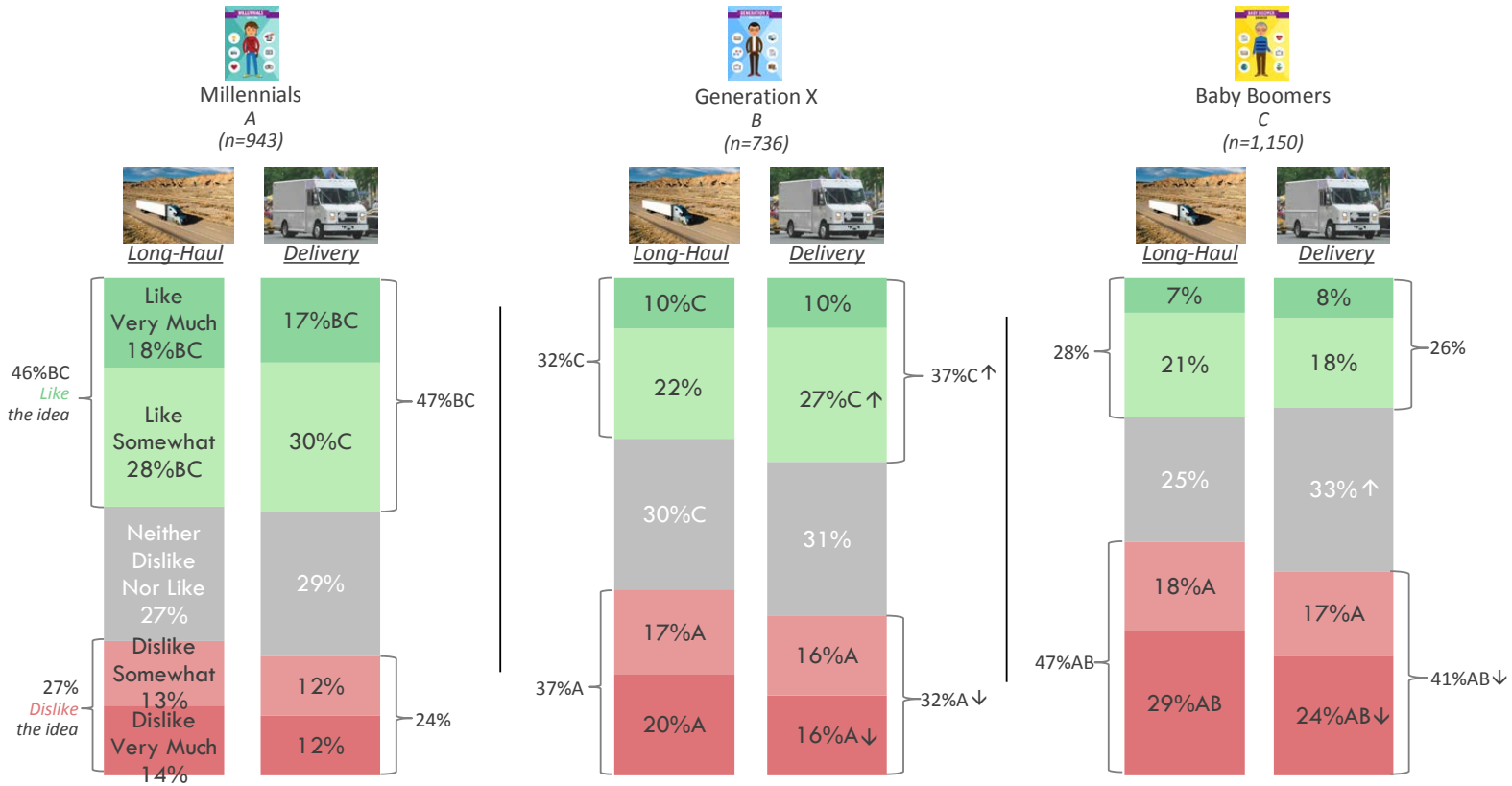
Expected Timeline for Self-Driving Delivery Concepts



The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B5. When, if ever, do you expect that companies might start to use self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations? (Scale: Within the next year; Within the next 3 years, but not the next year; Within the next 5 years, but not the next 3 years; Within the next 10 years, but not the next 5 years; Within the next 20 years, but not the next 10 years; More than 20 years; Never). | A,B,C: Significantly higher than corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within region at 95% c.l.

Generation gap: Millennials like the idea of using self-driving technology for long-haul transportation and delivery significantly more than Generation X or Baby Boomers.

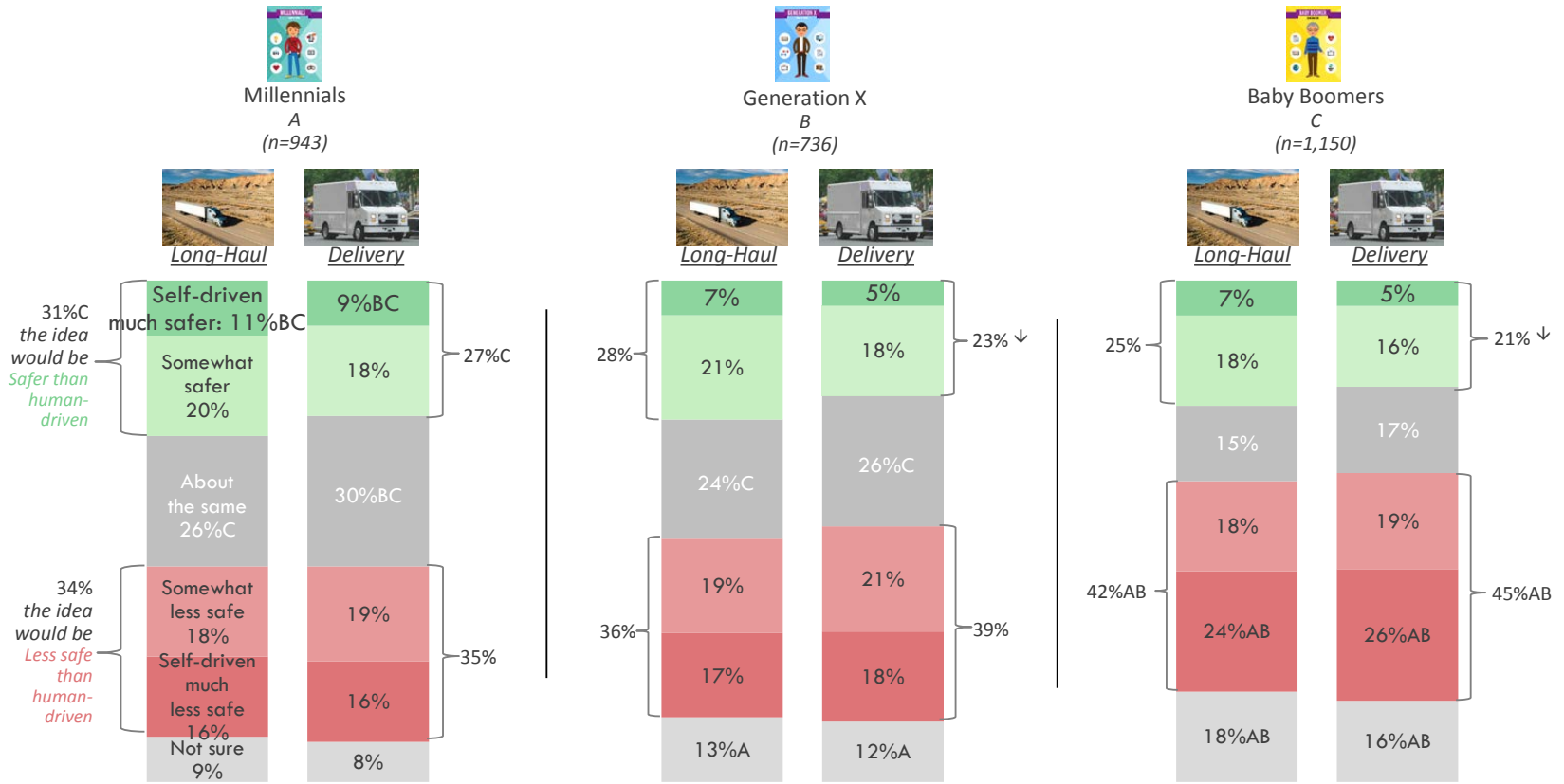
Liking of Self-Driving Delivery Concepts



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B3. How much do you like or dislike the idea of organizations using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

While Millennials are most likely to report believing that self-driving vehicles would be safer than human-driven vehicles, no group is convinced.

Perceived Safety of Self-driving Delivery Concepts vs. Human-Driven Vehicles



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B9. How safe or unsafe do you feel self-driving [long-haul/delivery] trucks would be compared to [long-haul/delivery] trucks driven by people? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

Older respondents are consistently more skeptical of the possible benefits of driverless technology than younger respondents. Millennials are notably more convinced of potential improvements in delivery speed, frequency, and price.

Strongly or Somewhat Disagree | Strongly or Somewhat Agree

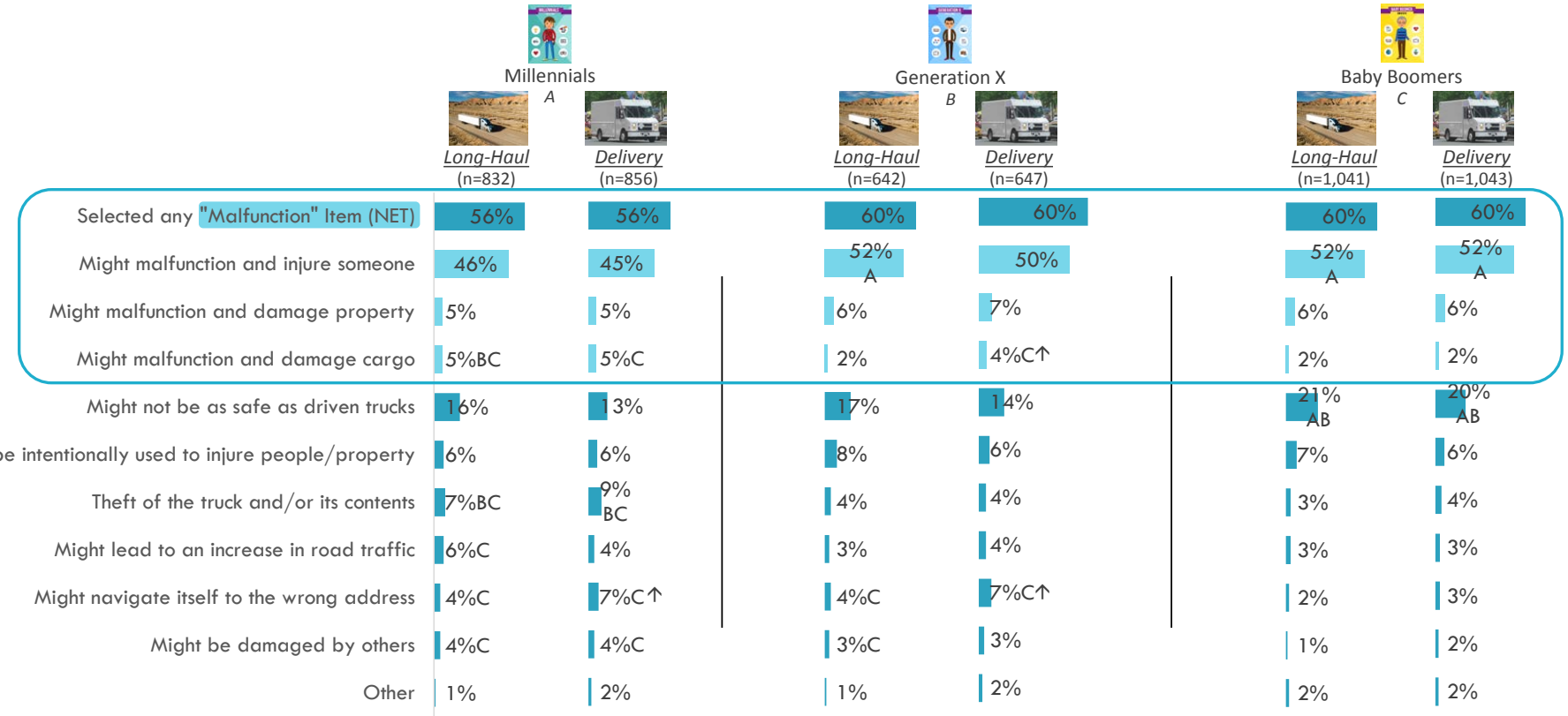
Believability of Self-Driving Delivery Concepts Benefits

The concept would…	Be Safe		Be Environmentally Friendly		Lead to Lower Shipping Prices		Lead to Faster Delivery		Lead to More Frequent Delivery*
	Long-Haul	*Delivery*	*Long-Haul*	*Delivery*	*Long-Haul*	*Delivery*	*Long-Haul*	*Delivery*	*Delivery*
Millennials *A* *(n=943)*	31% 39% BC	28% 35% BC	17% 31% BC	16% 32% BC	19% 49% BC	24%↑ 45% BC	15% 52% BC	16% 48% BC	15% 48% BC
Generation X *B* *(n=736)*	37% 27% A	33% 28% A	19% 25% C	17% 26% C	21% 40% C	25% 37% C	18% 38% C	21% 36% A C	20% 32% A C
Baby Boomers *C* *(n=1,150)*	45% 23% AB	41% 22% AB	24% 20% AB	21% 21% AB	28% 30% AB	31% 29% AB	25% 32% AB	26% 32% AB	28% 26% AB

The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B4. To what extent do you agree or disagree with the following statements about using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? (Scale: Strongly agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Strongly disagree). | *Asked only when evaluating delivery truck concept. | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

The primary concerns that respondents have with the idea of self-driving long-haul or delivery trucks are consistent across generations, though Millennials are more concerned about theft than their older counterparts.

Primary Self-Driving Vehicle Concern *(Among Respondents Who Reported At Least One Concern)*



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B11. And which of the following would you be most concerned about if a company were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | Based on respondents citing at least 1 concern at A/B10. Which, if any, of the following would you be concerned about if companies were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

Millennials and Generation X trust Amazon more than Baby Boomers for long-haul trucks. USPS ranks last with all three groups.

Self-Driving Long-Haul Trucks

Top Ranked Among National Sample amazon.com

Bottom Ranked Among National Sample UNITED STATES POSTAL SERVICE

Average Ranking as Trusted Brand for Implementing Driverless Long-Haul Trucks

Rank Within Group *(Average Rank)*

Millennials *(n=896)*

1 (1.97)

2 (2.51)

3 (2.53)

4 (3.00)

Generation X *(n=705)*

1 (2.18)

3 (2.47)

2 (2.44)

4 (2.93)

Baby Boomers *(n=1,081)*

3 (2.51)

1 (2.29)

1 (2.29)

4 (2.91)

Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the highway portion of the long trips between warehouses, and 4 is the organization you would least trust to use self-driving trucks for the highway portion of the long trips between warehouses.

Boomers trust UPS or FedEx the most for driverless delivery trucks. USPS ranks lowest with all three age groups.

Self-Driving Delivery Trucks

Average Ranking as Trusted Brand for Implementing Driverless Delivery Trucks

Rank Within Group *(Average Rank)*

	Millennials *(n=896)*	Generation X *(n=705)*	Baby Boomers *(n=1,081)*
Top Ranked Among National Sample	1 (1.93)	1 (2.17)	3 (2.50)
	2 (2.56)	3 (2.49)	1 (2.29)
	3 (2.63)	2 (2.46)	2 (2.33)
Bottom Ranked Among National Sample	4 (2.89)	4 (2.89)	4 (2.88)

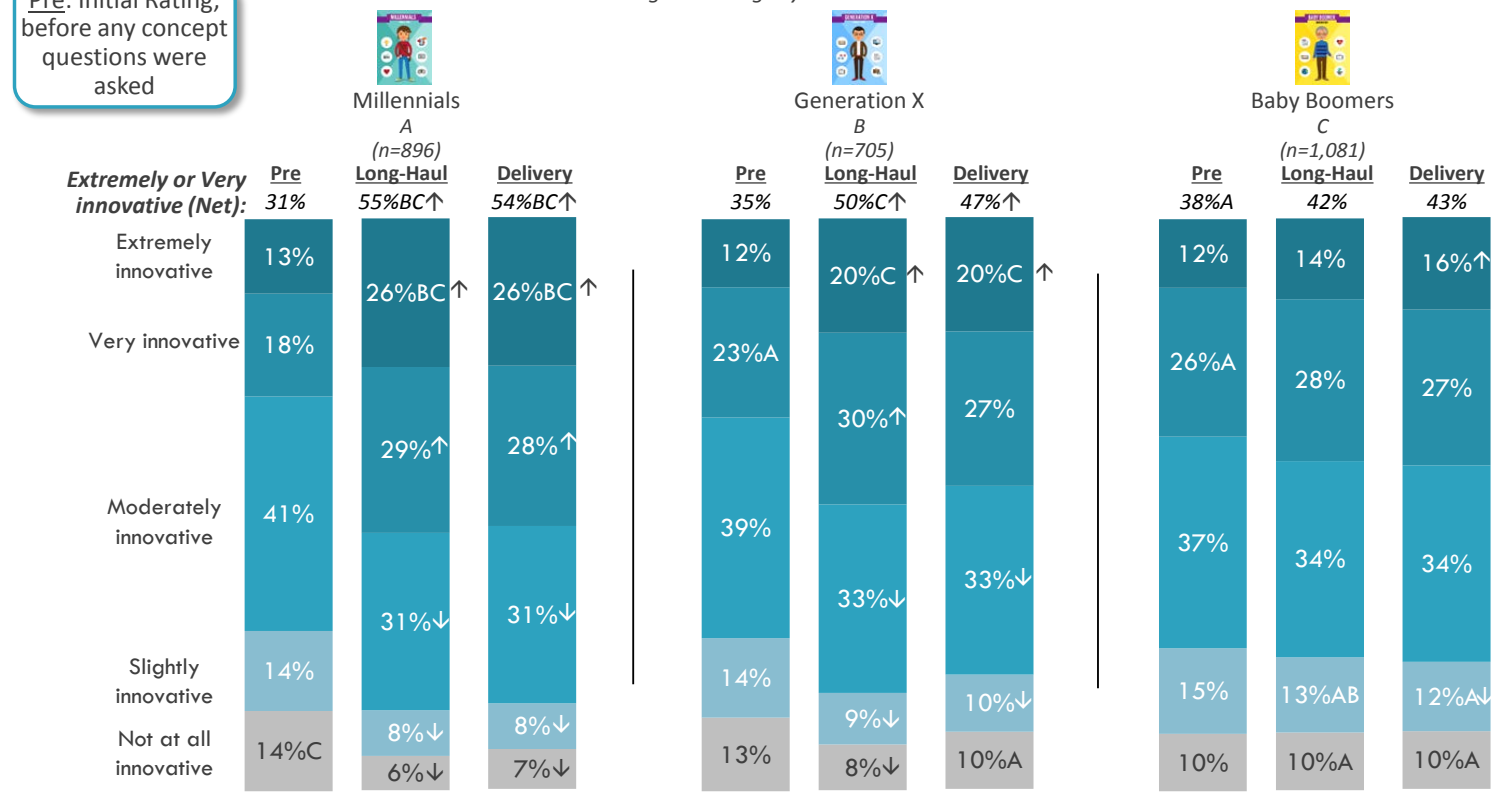
Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | B6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the delivery of mail or packages to their final destinations, and 4 is the organization you would least trust to use self-driving trucks for the delivery of mail or packages to their final destinations.

Implementing driverless systems into its delivery processes gives USPS image as an innovative company a large boost among Millennials, but less so among Generation X and Boomers.

Effect of Self-Driving Vehicle Concepts on USPS "Innovative Company"

Among Those Slightly Familiar or More with All Brands

Pre: Initial Rating, before any concept questions were asked

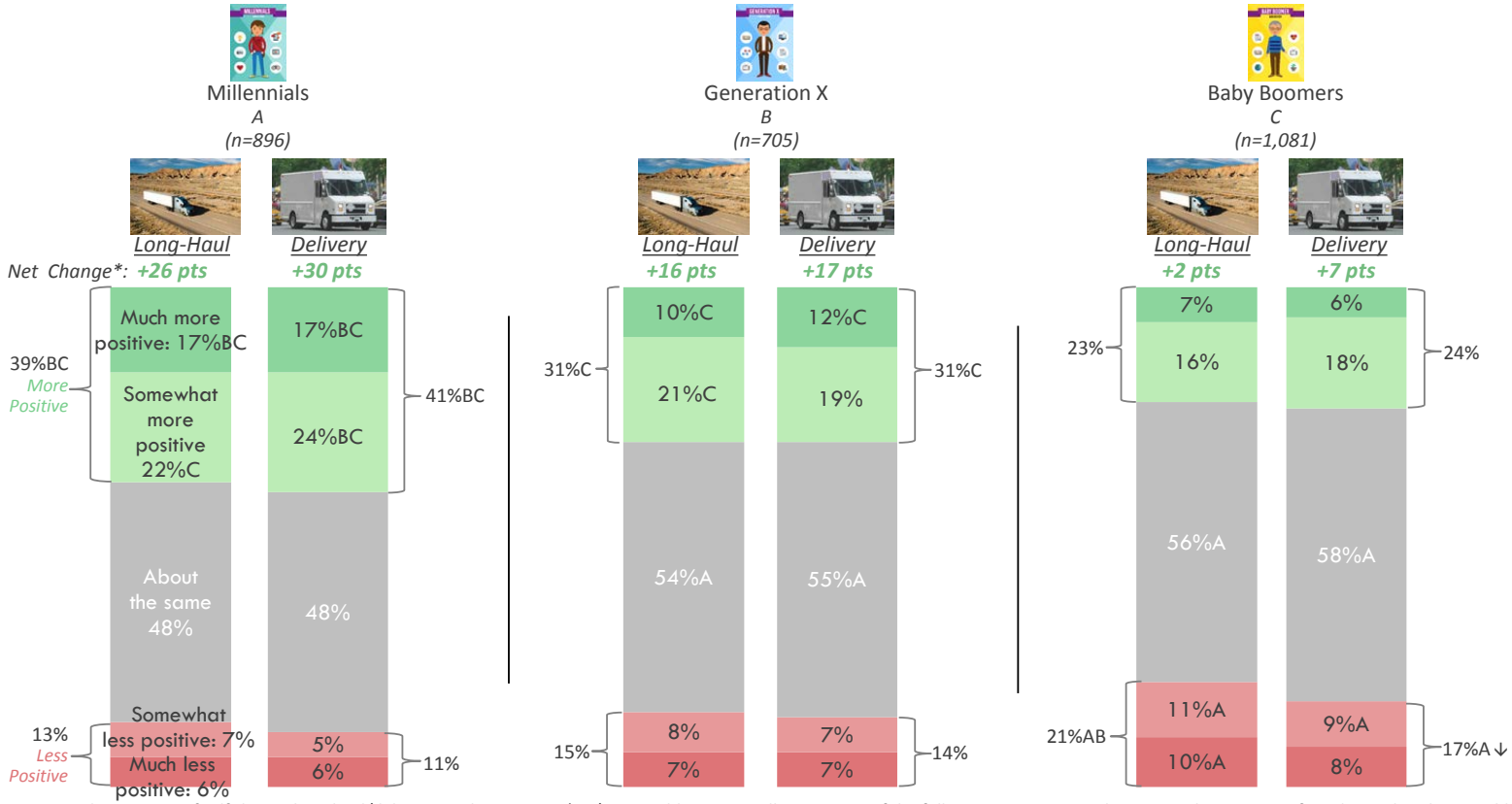


Q3 asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts, A/B8 asked following concept exposure. | Q3. Overall, how innovative do you feel the following organizations are? | A/B8. How innovative would you feel that the following organizations were if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

USPS could achieve a large net boost in brand positivity among Millennials if it were to pursue a driverless initiative. The result is also positive among Generation X and Baby Boomers, but the effect is smaller.

Effect of Self-Driving Delivery Concepts on USPS Brand Positivity

Among Slightly Familiar or More with All Brands



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B7. Would your overall impression of the following organizations be more or less positive if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | *Net Change = (More Positive – Less Positive). | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

Findings by Segment

Urban  */Suburban*  */Rural* 

Groups in this section were defined based on responses to the question “S3. Which of the following best describes the area where you live?” Respondents classified as Urban answered “A city or urban area.” Respondents classified as Suburban answered “A town or suburban area” or “A small town.” Respondents classified as Rural answered “A rural area” or “A remote area with few other nearby residents.”

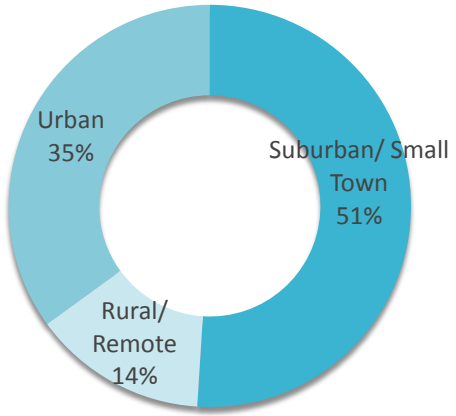
SUMMARY OF FINDINGS

Urban — Suburban/Small Town — Rural/Remote

- Residents of urban areas are the most open to the idea of self-driving technology. More urban residents like the self-driven long-haul and delivery trucks concepts than dislike them, and implementing either could greatly improve brand positivity with this group.
- Residents of rural and remote areas are the most skeptical of the idea of self-driving technology. They are most likely to believe that it will not be safe, and are the least convinced of its potential benefits.
- The long-haul truck concept is particularly unpopular in rural and remote areas, where its introduction would lead to a small decrease in brand positivity for the Postal Service.
- USPS is the lowest-ranked “trusted brand” for implementing self-driving vehicles across all geographies.

Sample Breakdown by

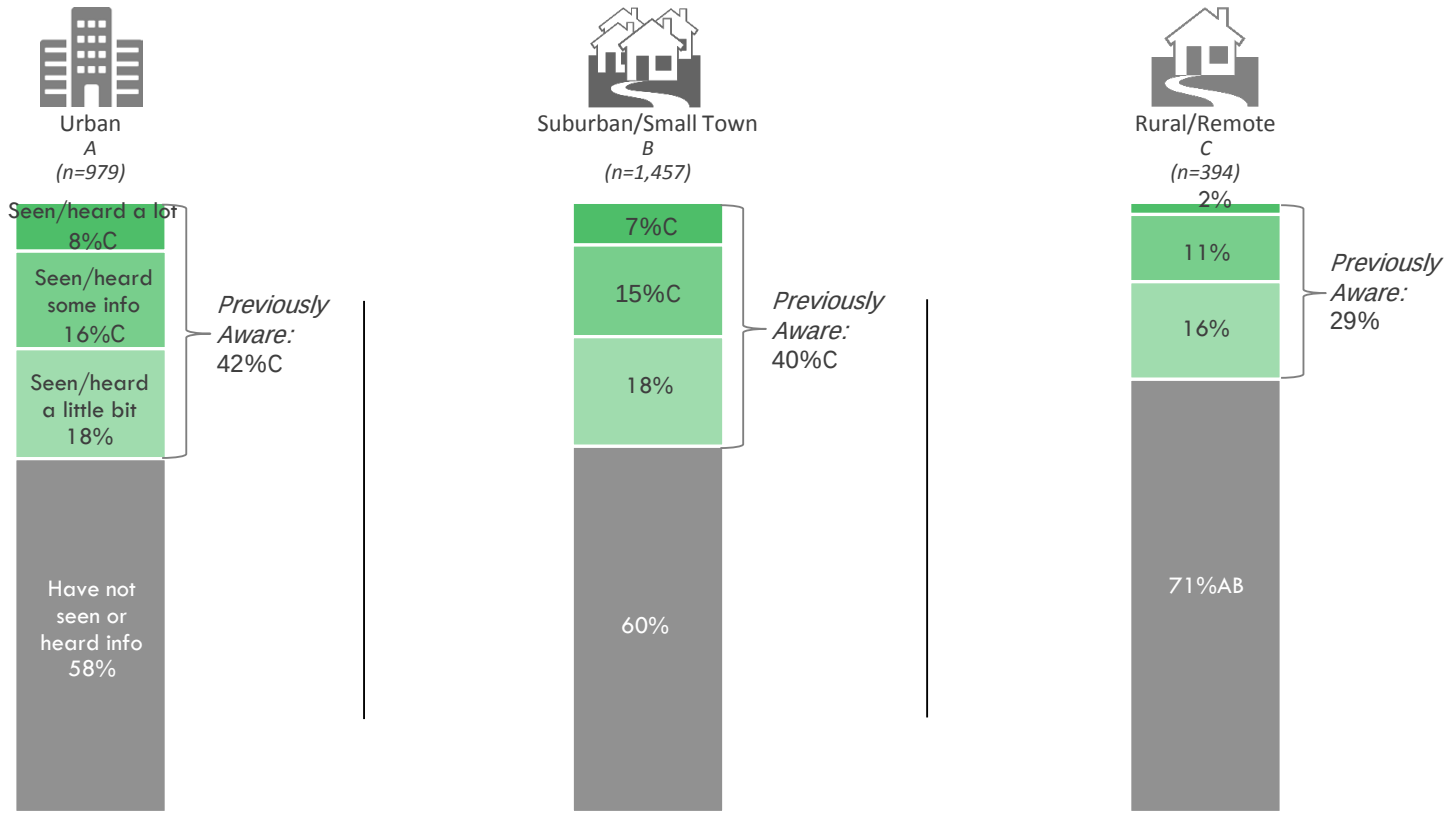
Self-Reported Area of Residence



Groups in this section were defined based on responses to the question “S3. Which of the following best describes the area where you live?” Respondents classified as Urban answered “A city or urban area.” Respondents classified as Suburban answered “A town or suburban area” or “A small town.” Respondents classified as Rural answered “A rural area” or “A remote area with few other nearby residents.”

Americans in urban and suburban areas are more aware of the concept of transporting mail or packages using self-driving vehicles than their rural counterparts.

Awareness of Overall Self-Driving Delivery Concept



Question asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts. | Q19. Have you seen or heard anything about organizations considering the use of self-driving vehicles for the transportation of mail or packages in the future? | A,B,C: Significantly higher than corresponding group at 95% c.l.

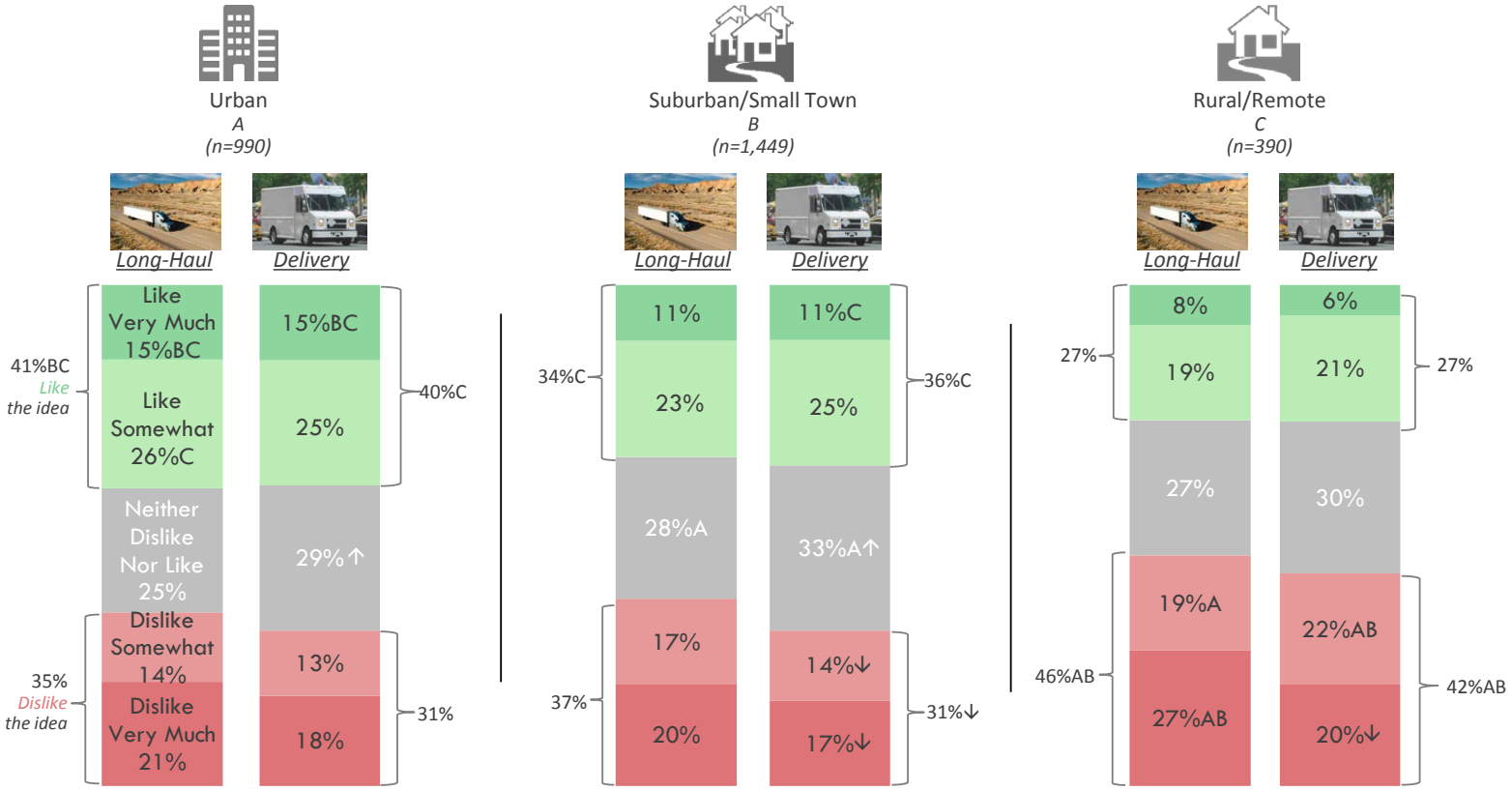
Urban and suburban/small town residents are more likely to expect self-driving technology for long-haul transportation or delivery within the next 5 years than residents of rural/remote areas.

Expected Timeline for Self-Driving Delivery Concepts

The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B5. When, if ever, do you expect that companies might start to use self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations? (Scale: Within the next year; Within the next 3 years, but not the next year; Within the next 5 years, but not the next 3 years; Within the next 10 years, but not the next 5 years; Within the next 20 years, but not the next 10 years; More than 20 years; Never). | A,B,C: Significantly higher than corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within region at 95% c.l.

Urban residents are the most open to both the long-haul and delivery concepts. Americans living in rural and remote areas dislike the concepts the most.

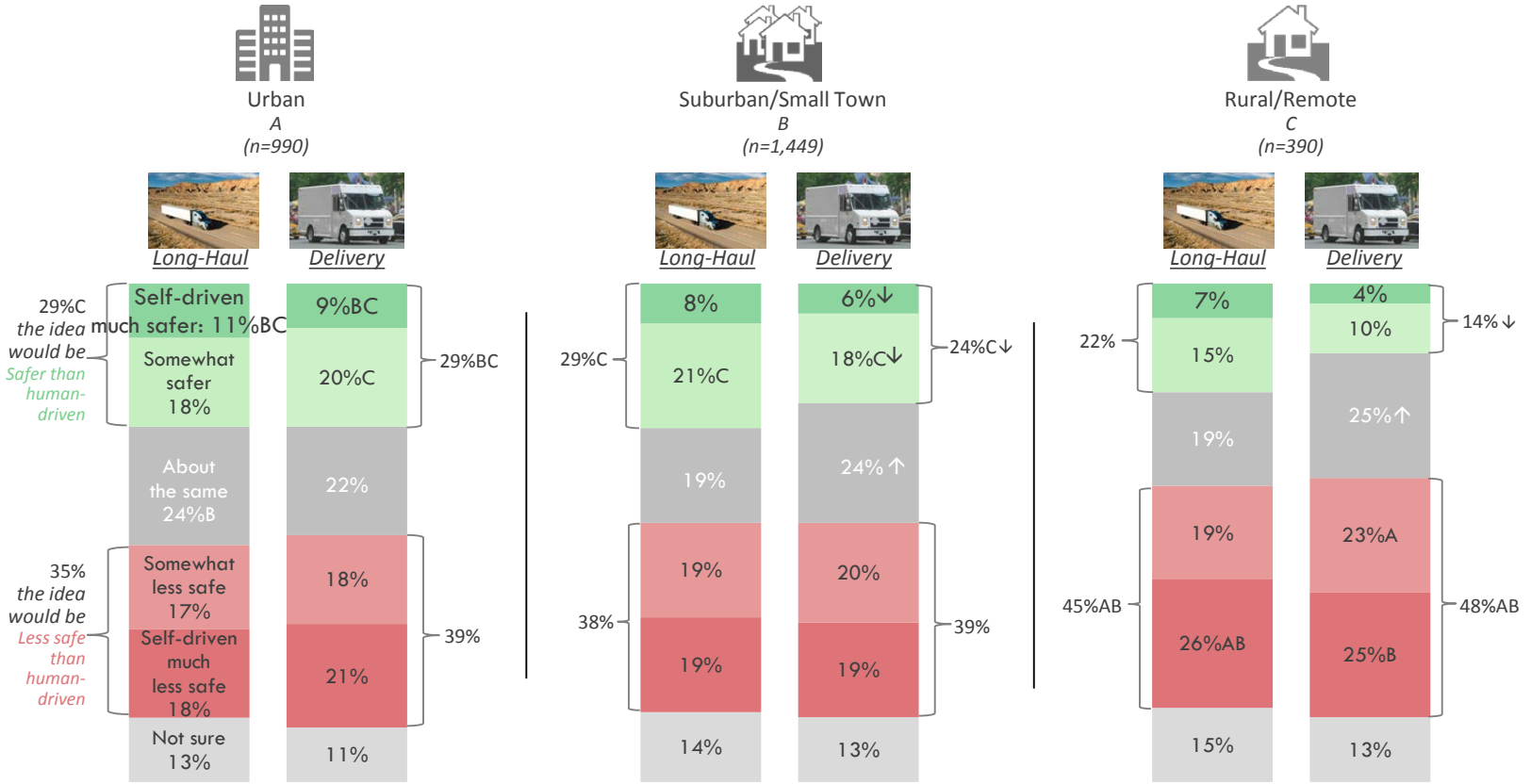
Liking of Self-Driving Delivery Concepts



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B3. How much do you like or dislike the idea of organizations using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

No group has a majority that believes that the self-driving concepts will be safer than human-driven vehicles, but urban and suburban residents are more convinced than those that live in rural or remote areas.

Perceived Safety of Self-driving Delivery Concepts vs. Human-Driven Vehicles



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B9. How safe or unsafe do you feel self-driving [long-haul/delivery] trucks would be compared to long-haul trucks driven by people? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

Neither urban, suburban, nor rural residents are fully convinced of the potential benefits that implementing driverless technology may bring for their delivery experience. Those in rural areas are the most skeptical.

Strongly or Somewhat Disagree | Strongly or Somewhat Agree

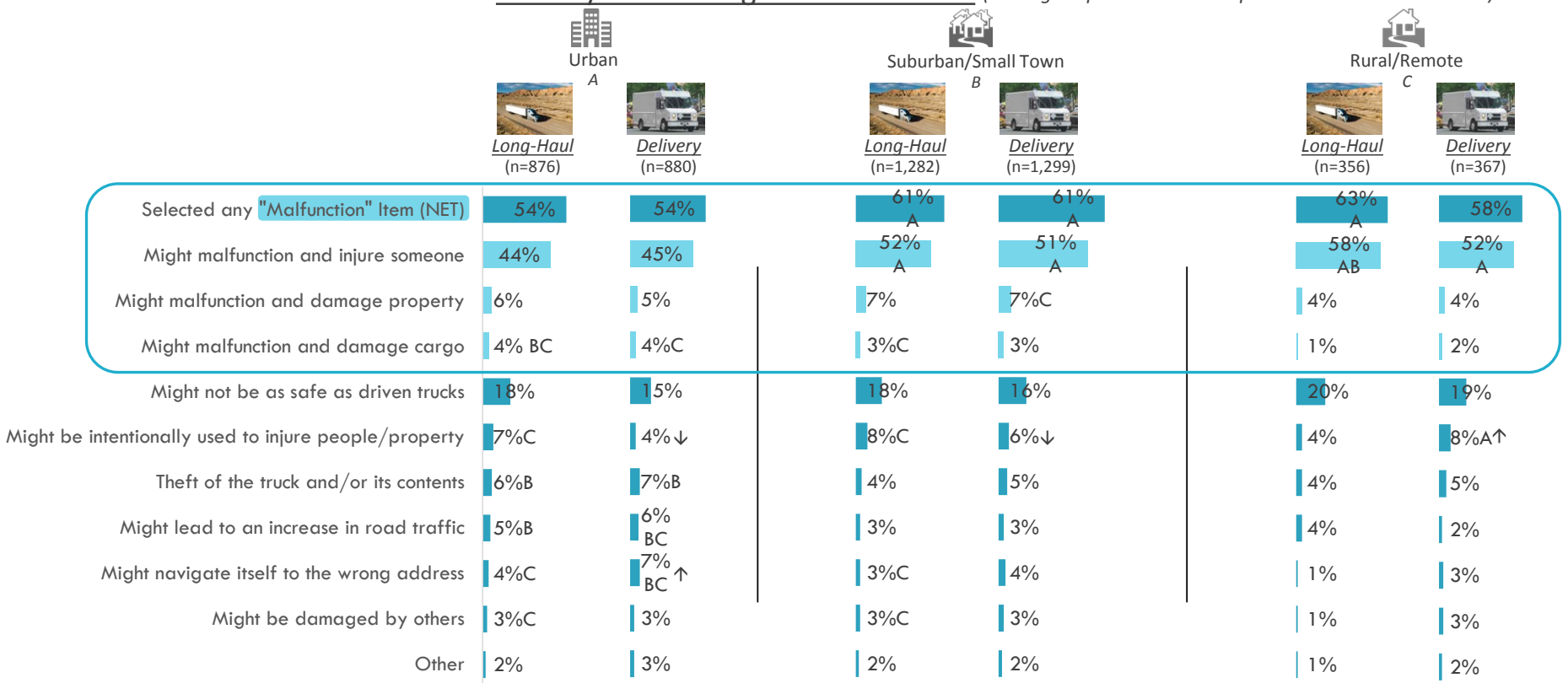
Believability of Self-Driving Delivery Concepts Benefits

The concept would…	Be Safe		Be Environmentally Friendly		Lead to Lower Shipping Prices		Lead to Faster Delivery		Lead to More Frequent Delivery*
	 *Long-Haul*	 *Delivery*	 *Long-Haul*	 *Delivery*	 *Long-Haul*	 *Delivery*	 *Long-Haul*	 *Delivery*	 *Delivery*
Urban *A* *(n=990)*	36% 34% BC	32% 34% BC	18% 30% BC	16% 32% BC	20% 44% BC	22% 42% BC	17% 44% BC	18% 44% BC	18% 42% BC
Suburban/ Small Town *B* *(n=1,449)*	38% 27%	34%↓ 26% C	21% A 23%	20% A 23%	25% A 37% C	29%↑ A 35% C	21% A 39% C	23% A 36% C	23% A 33% C
Rural/ Remote *C* *(n=390)*	42% A 25%	43% AB 17%↓	24% A 20%	18%↓ 21%	29% A 32%	33% A 29%	27% AB 33%	26% A 30%	25% A 26%

The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B4.To what extent do you agree or disagree with the following statements about using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? (Scale: Strongly agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Strongly disagree). | *Asked only when evaluating delivery truck concept. | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

While urban, suburban, and rural residents share similar concerns about self-driving long-haul and delivery vehicles, the urban group is less concerned about malfunction leading to injury than the other groups.

Primary Self-Driving Vehicle Concern *(Among Respondents Who Reported At Least One Concern)*



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B11. And which of the following would you be most concerned about if a company were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | Based on respondents citing at least 1 concern at A/B10. Which, if any, of the following would you be concerned about if companies were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

USPS is the lowest-ranked “trusted brand” for implementing self-driving long-haul trucks among all three groups tested.

Self-Driving Long-Haul Trucks

Top Ranked Among National Sample amazon.com

Bottom Ranked Among National Sample UNITED STATES POSTAL SERVICE

Average Ranking as Trusted Brand for Implementing Driverless Long-Haul Trucks

Rank Within Group *(Average Rank)*

Urban *(n=946)*	Suburban/Small Town *(n=1,371)*	Rural/Remote *(n=365)*
1 (2.24)	1 (2.22)	2 (2.36)
2 (2.39)	3 (2.45)	1 (2.31)
3 (2.45)	2 (2.38)	3 (2.38)
4 (2.92)	4 (2.95)	4 (2.95)

Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the highway portion of the long trips between warehouses, and 4 is the organization you would least trust to use self-driving trucks for the highway portion of the long trips between warehouses.

Trust rankings for implementing driverless delivery trucks are very stable across the urban, suburban, and rural groups.

Self-Driving Delivery Trucks

Top Ranked Among National Sample amazon.com

Bottom Ranked Among National Sample UNITED STATES POSTAL SERVICE

Average Ranking as Trusted Brand for Implementing Driverless Delivery Trucks

Rank Within Group *(Average Rank)*

Urban *(n=946)*	Suburban/Small Town *(n=1,371)*	Rural/Remote *(n=365)*
1 (2.19)	1 (2.21)	1 (2.33)
2 (2.41)	3 (2.45)	2 (2.40)
3 (2.55)	2 (2.42)	3 (2.42)
4 (2.85)	4 (2.92)	4 (2.85)

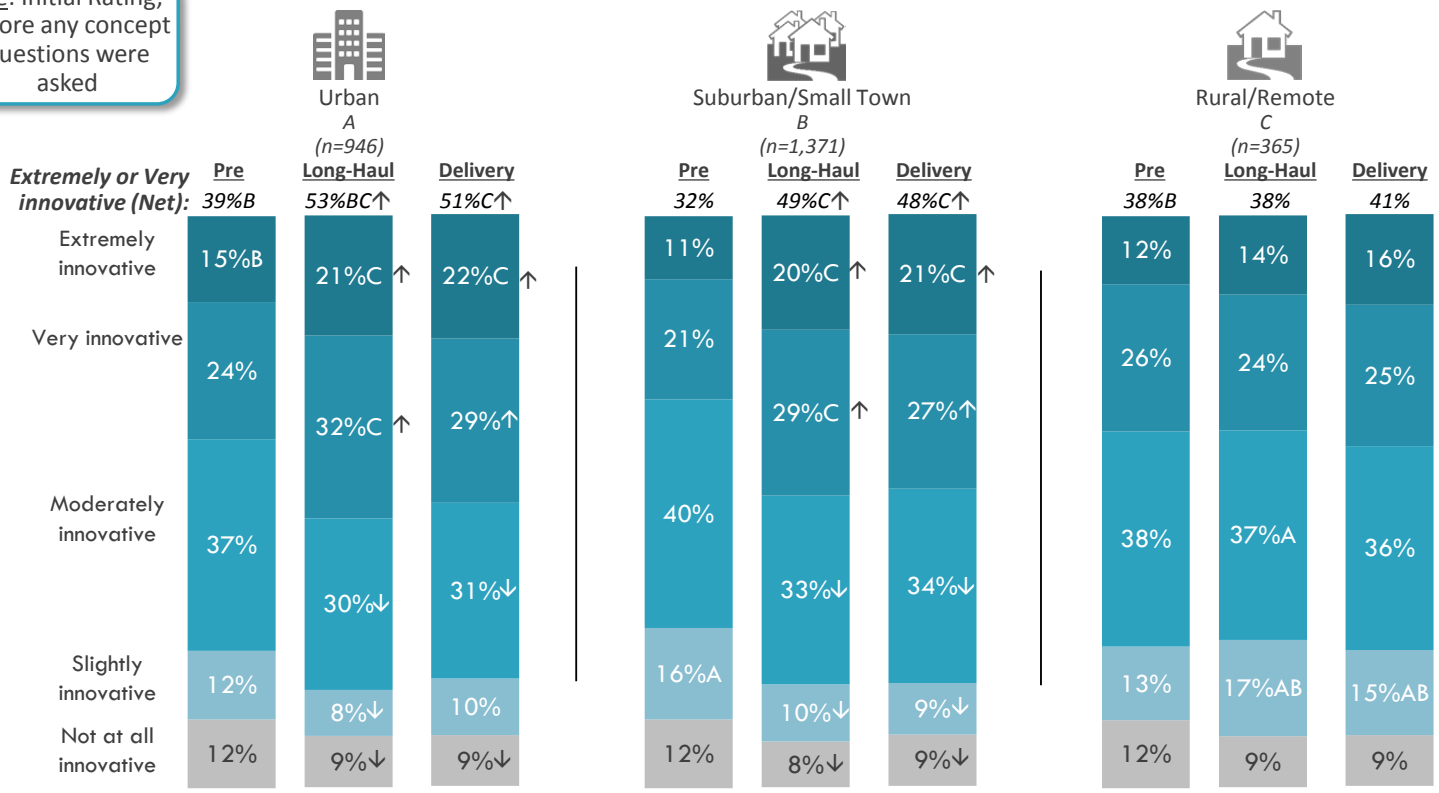
Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | B6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the delivery of mail or packages to their final destinations, and 4 is the organization you would least trust to use self-driving trucks for the delivery of mail or packages to their final destinations.

Implementing self-driving long-haul and delivery trucks would improve the Postal Service's image as an innovative company among urban and suburban/small town residents.

Effect of Self-Driving Vehicle Concepts on USPS "Innovative Company"

Among Those Slightly Familiar or More with All Brands

Pre: Initial Rating, before any concept questions were asked

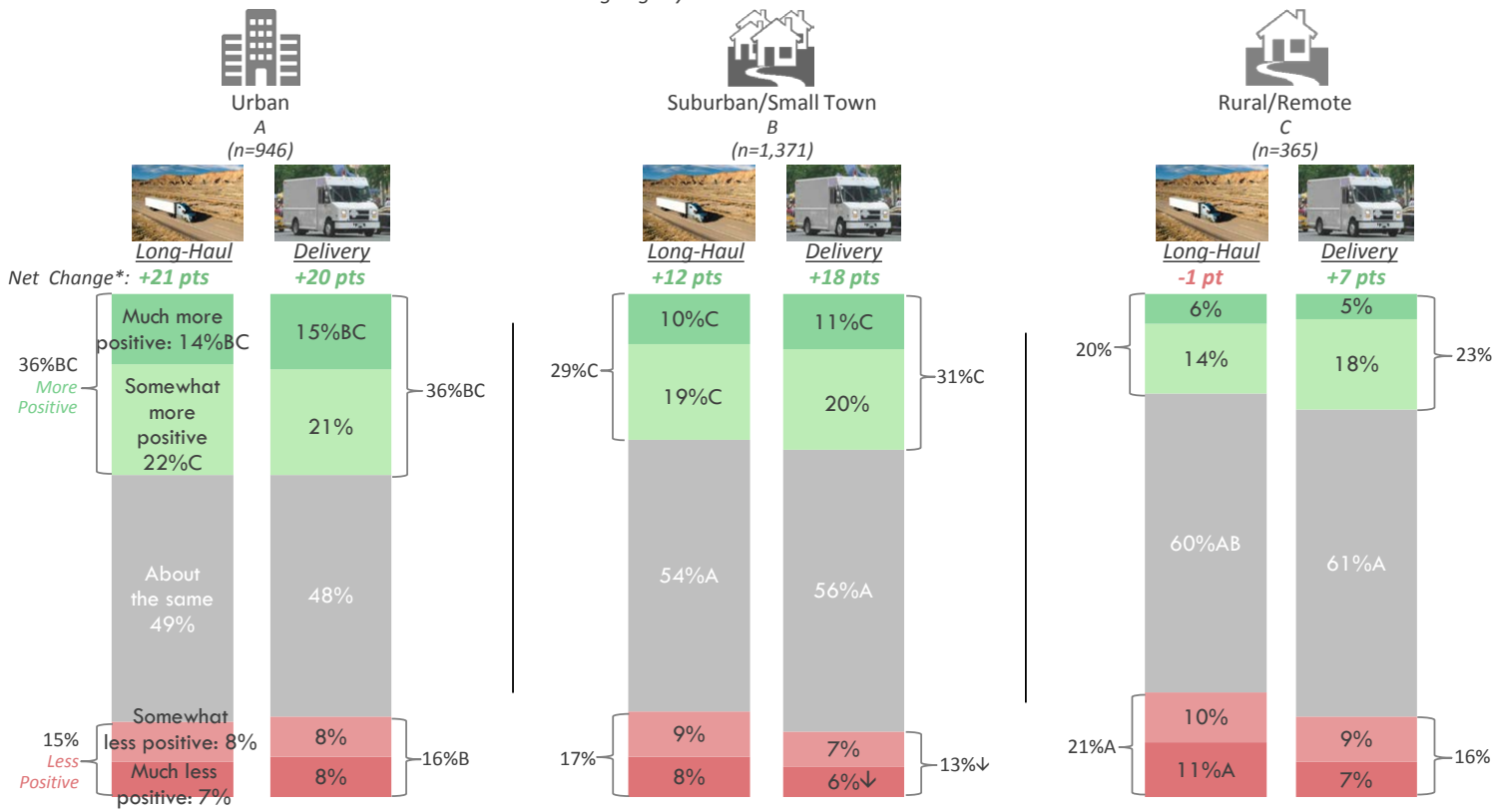


Q3 asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts, A/B8 asked following concept exposure. | Q3. Overall, how innovative do you feel the following organizations are? | A/B8. How innovative would you feel that the following organizations were if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

Implementing self-driving long-haul or delivery trucks leads to large net increases in brand positivity for USPS in both urban and suburban areas. In rural/remote areas, however, the long-haul concept actually leads to a slight net loss in brand positivity, while the delivery concept leads to a small gain.

Effect of Self-Driving Delivery Concepts on USPS Brand Positivity

Among Slightly Familiar or More with All Brands

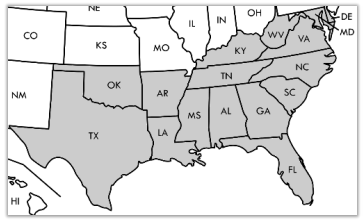


Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B7. Would your overall impression of the following organizations be more or less positive if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | *Net Change = (More Positive – Less Positive). | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

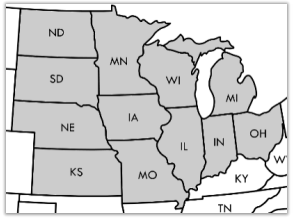
Findings by Segment

Geographic Regions

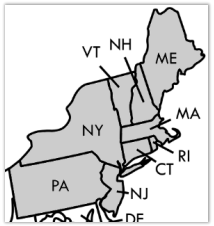
West



South



Midwest



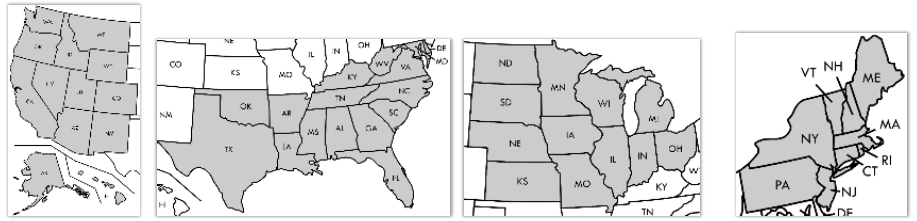
Northeast

Respondents were classified based on Census' regional definitions. Groups in this section were defined based on responses to the question "S2. Which state do you live in?"

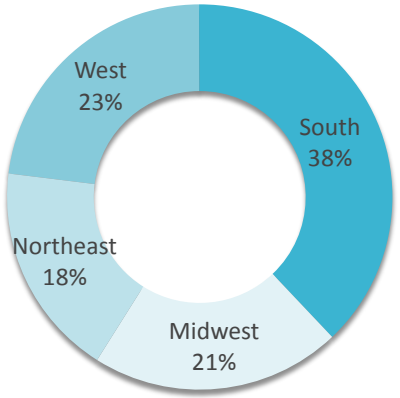
SUMMARY OF FINDINGS

Geographic Regions

- Regional perceptions closely mirror national results.
- Residents across regions demonstrate similar levels of awareness, and largely agree on when they will start to see self-driven vehicles in action.
- Westerners are generally the most receptive to both concepts, though all regions exhibit similar levels of apprehension.
- Northeasterners are the least convinced of the possible benefits of the concept to their delivery experience, and are the most concerned with its safety.
- The use of self-driving technology could boost USPS' brand positivity in every region — particularly in the West and South.



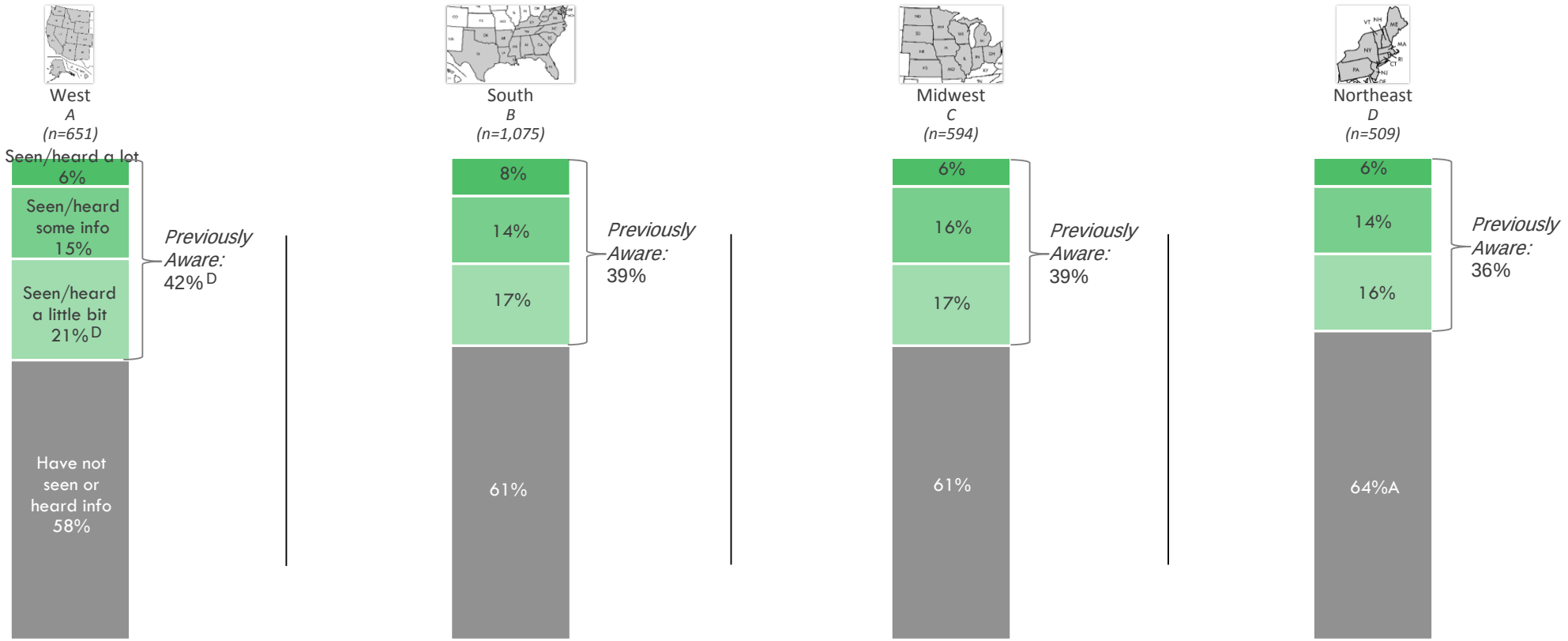
Sample Breakdown by
Geographic Region



Groups in this section were defined based on responses to the question "S2. Which state do you live in?" Respondents were classified based on Census' regional definitions.

Most Americans are unaware of the idea of using driverless vehicles for logistics applications, regardless of their region.

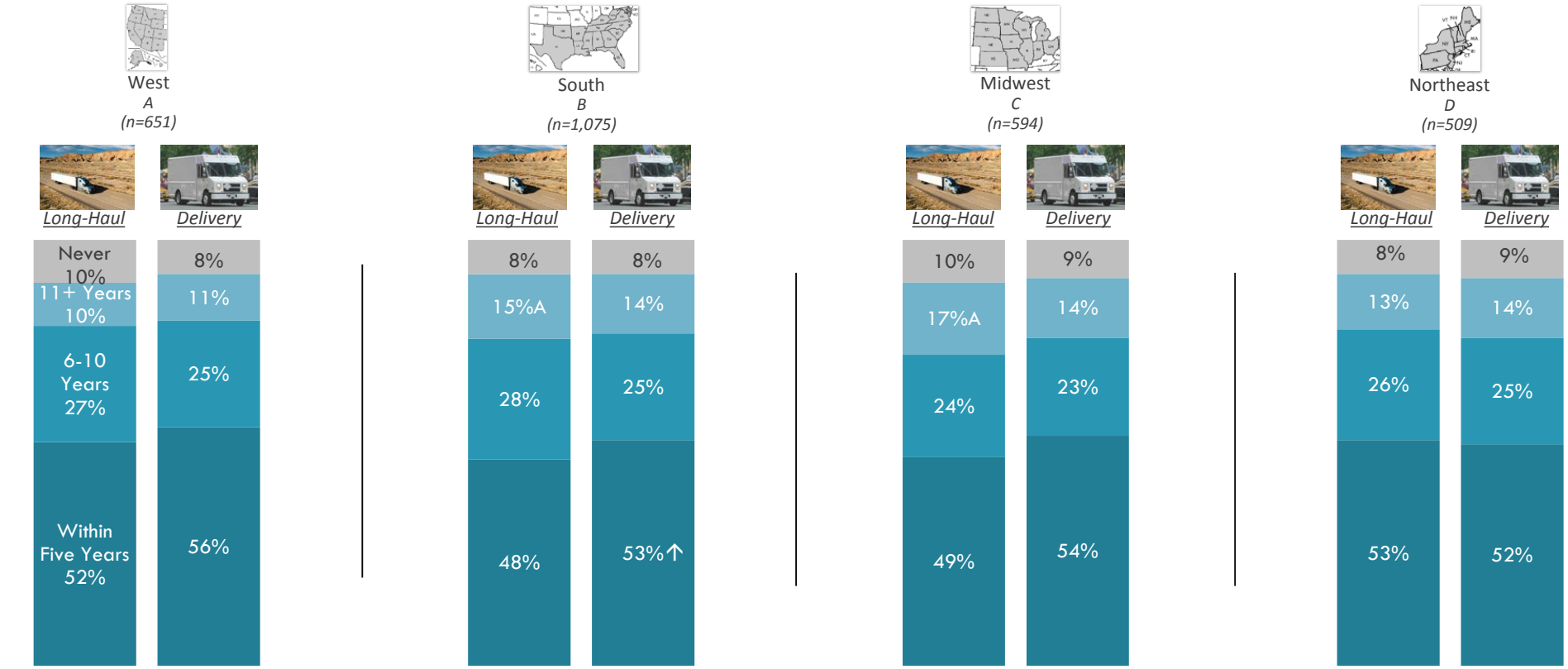
Awareness of Overall Self-Driving Delivery Concept



Question asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts. | Q19. Have you seen or heard anything about organizations considering the use of self-driving vehicles for the transportation of mail or packages in the future? | A,B,C,D: Significantly higher than corresponding group at 95% c.l.

The public expects similar timelines for the implementation of both self-driving long-haul trucks and self-driving delivery trucks across all regions.

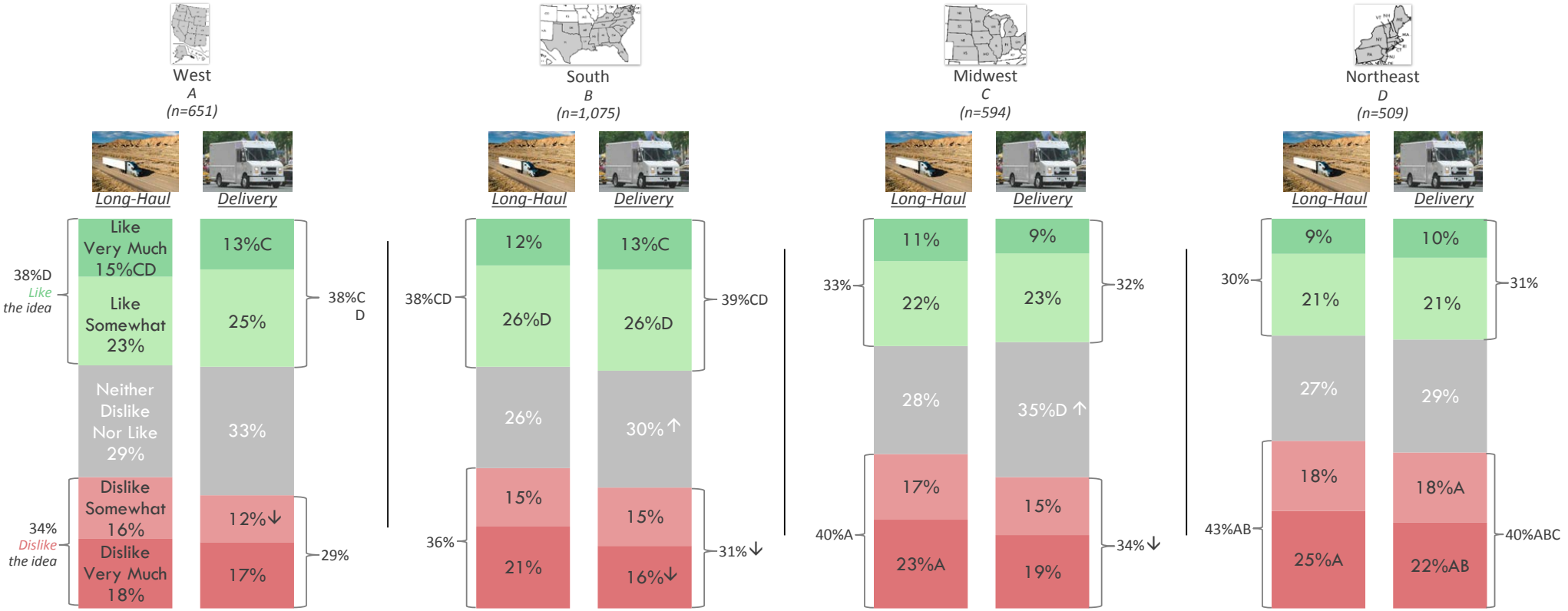
Expected Timeline for Self-Driving Delivery Concepts



The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B5. When, if ever, do you expect that companies might start to use self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations? (Scale: Within the next year; Within the next 3 years, but not the next year; Within the next 5 years, but not the next 3 years; Within the next 10 years, but not the next 5 years; Within the next 20 years, but not the next 10 years; More than 20 years; Never). | A,B,C,D: Significantly higher than corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within region at 95% c.l.

Across regions, residents are consistent in how much they like the concepts, but residents of the West and South like the idea the most. Southerners and Midwesterners have a greater dislike for the long-haul truck concept than for the delivery truck concept.

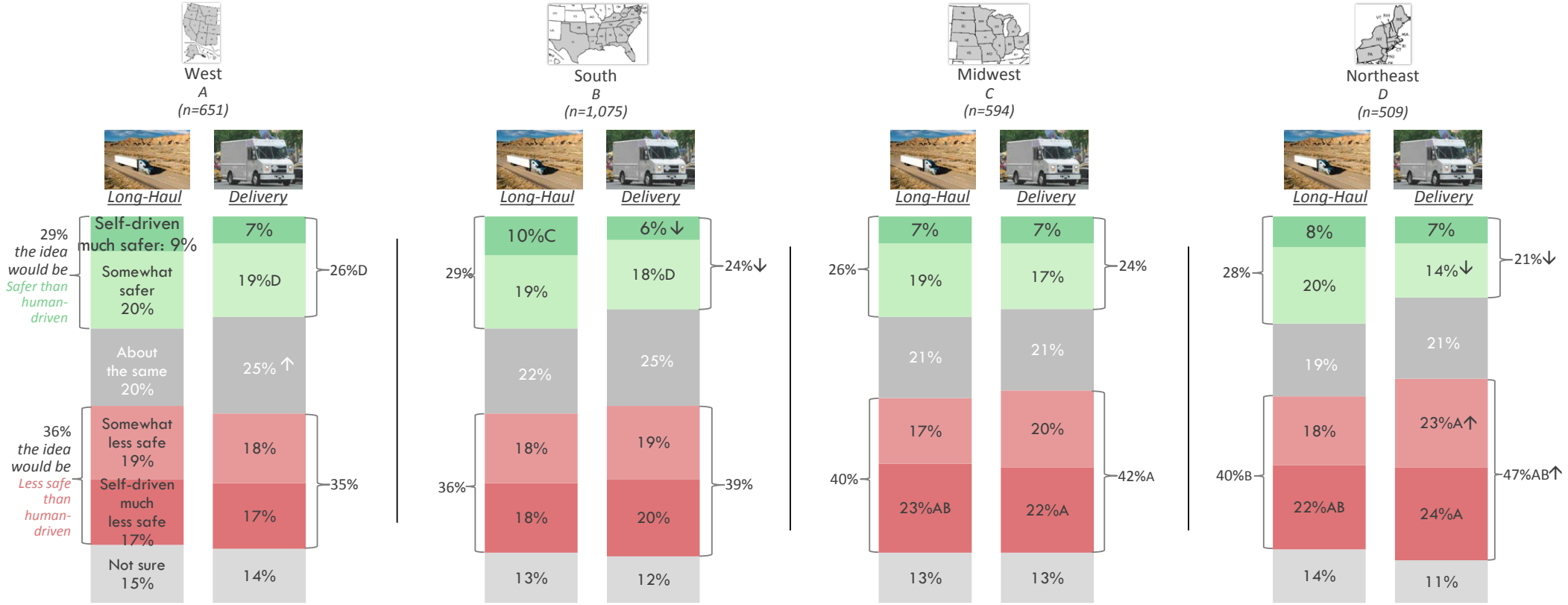
Liking of Self-Driving Delivery Concepts



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B3. How much do you like or dislike the idea of organizations using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C,D: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

Both driverless concepts are viewed as less safe than driven vehicles, regardless of the region. The delivery concept is perceived to be less safe than the long-haul concept in the South and Northeast, where the public is particularly skeptical about the safety of the idea.

Perceived Safety of Self-driving Delivery Concepts vs. Human-Driven Vehicles



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B9. How safe or unsafe do you feel self-driving [long-haul/delivery] trucks would be compared to long-haul trucks driven by people? | A,B,C,D: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

The believability of the potential benefits of driverless vehicles' use for logistics is very consistent across the two concepts. Residents of the West and South are slightly more convinced of several of the claims than residents of the Midwest and Northeast.

Strongly or Somewhat Disagree | Strongly or Somewhat Agree

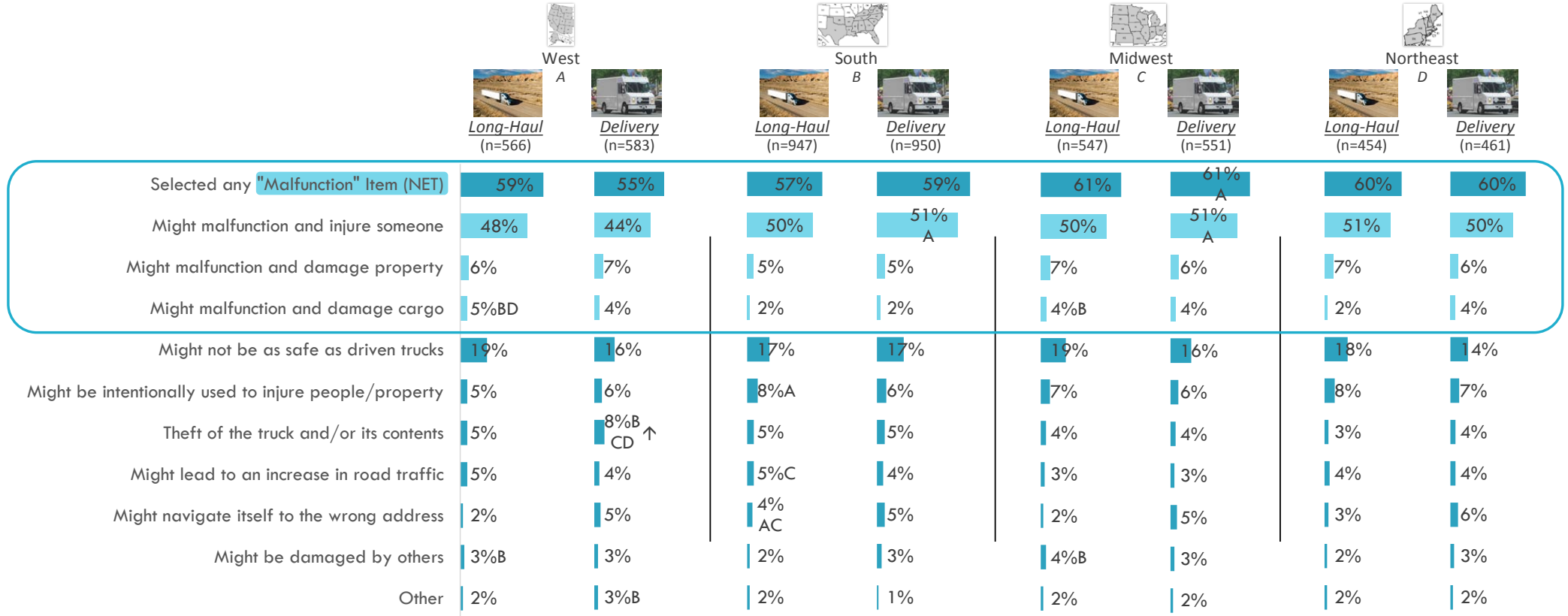
Believability of Self-Driving Delivery Concepts Benefits

The concept would…	Be Safe		Be Environmentally Friendly		Lead to Lower Shipping Prices		Lead to Faster Delivery		Lead to More Frequent Delivery*
	Long-Haul	*Delivery*	*Long-Haul*	*Delivery*	*Long-Haul*	*Delivery*	*Long-Haul*	*Delivery*	*Delivery*
West *A* *(n=651)*	34% 31%	30% 30% C	20% 26% D	17% 27% C	22% 40%	24% 39%	19% 42% D	18% 41% CD	20% 36%
South *B* *(n=1075)*	37% 30%	33% 29% C	19% 29% CD	18% 29% CD	24% 39%	28%↑ 37% A	19% 43% CD	21% 40% CD	21% 37% C
Midwest *C* *(n=594)*	39% 29%	37% A 25%	22% 22%	18% 21%	23% 37%	26% 36%	19% 38%	22% 35%	20% 31%
Northeast *D* *(n=509)*	44% AB 26%	39% AB 25%	24% B 19%	22% AB 24%	26% 38%	30% A 34%	25% ABC 35%	25% A 33%	27% ABC 33%

The data shown combines scale points for clarity of presentation. | Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B4.To what extent do you agree or disagree with the following statements about using self-driving trucks as we just described for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? (Scale: Strongly agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Strongly disagree). | *Asked only when evaluating delivery truck concept. | A,B,C,D: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.l.

Fear that driverless technology might malfunction and injure someone is the public's main concern across all regions.

Primary Self-Driving Vehicle Concern *(Among Respondents Who Reported At Least One Concern)*



Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B11. And which of the following would you be most concerned about if a company were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | Based on respondents citing at least 1 concern at A/B10. Which, if any, of the following would you be concerned about if companies were to use self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C,D: Significantly higher than data point in corresponding group at 95% c.I. | ↑ / ↓: Significantly higher/lower than Long-Haul Truck measure within same group at 95% c.I.

USPS is the least trusted brand for implementing self-driving long-haul trucks in every region. The national rankings hold in each geography, except for the South where FedEx ranks slightly above UPS.

Self-Driving Long-Haul Trucks

Average Ranking as Trusted Brand for Implementing Driverless Long-Haul Trucks

Rank Within Group *(Average Rank)*

	West *(n=616)*	South *(n=1,024)*	Midwest *(n=557)*	Northeast *(n=485)*
Top Ranked Among National Sample amazon.com	1 (2.16)	1 (2.29)	1 (2.24)	1 (2.25)
ups	2 (2.41)	3 (2.43)	2 (2.41)	2 (2.37)
FedEx	3 (2.47)	2 (2.34)	3 (2.43)	3 (2.44)
Bottom Ranked Among National Sample United States Postal Service	4 (2.96)	4 (2.93)	4 (2.93)	4 (2.94)

Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the highway portion of the long trips between warehouses, and 4 is the organization you would least trust to use self-driving trucks for the highway portion of the long trips between warehouses.

As with the national rankings, USPS is the least trusted brand for implementing self-driving delivery trucks in each region. The national rankings also hold in the West and Northeast, but FedEx ranks slightly above UPS in the South and Midwest.

Self-Driving Delivery Trucks

Average Ranking as Trusted Brand for Implementing Driverless Delivery Trucks

Rank Within Group *(Average Rank)*

West
(n=616)

South
(n=1,024)

Midwest
(n=557)

Northeast
(n=485)

Top Ranked Among National Sample

	West *(n=616)*	South *(n=1,024)*	Midwest *(n=557)*	Northeast *(n=485)*
amazon.com	1 (2.13)	1 (2.24)	1 (2.26)	1 (2.24)
UPS	2 (2.43)	3 (2.48)	3 (2.43)	2 (2.35)
FedEx	3 (2.54)	2 (2.41)	2 (2.41)	3 (2.55)
United States Postal Service	4 (2.90)	4 (2.87)	4 (2.90)	4 (2.86)

Bottom Ranked Among National Sample

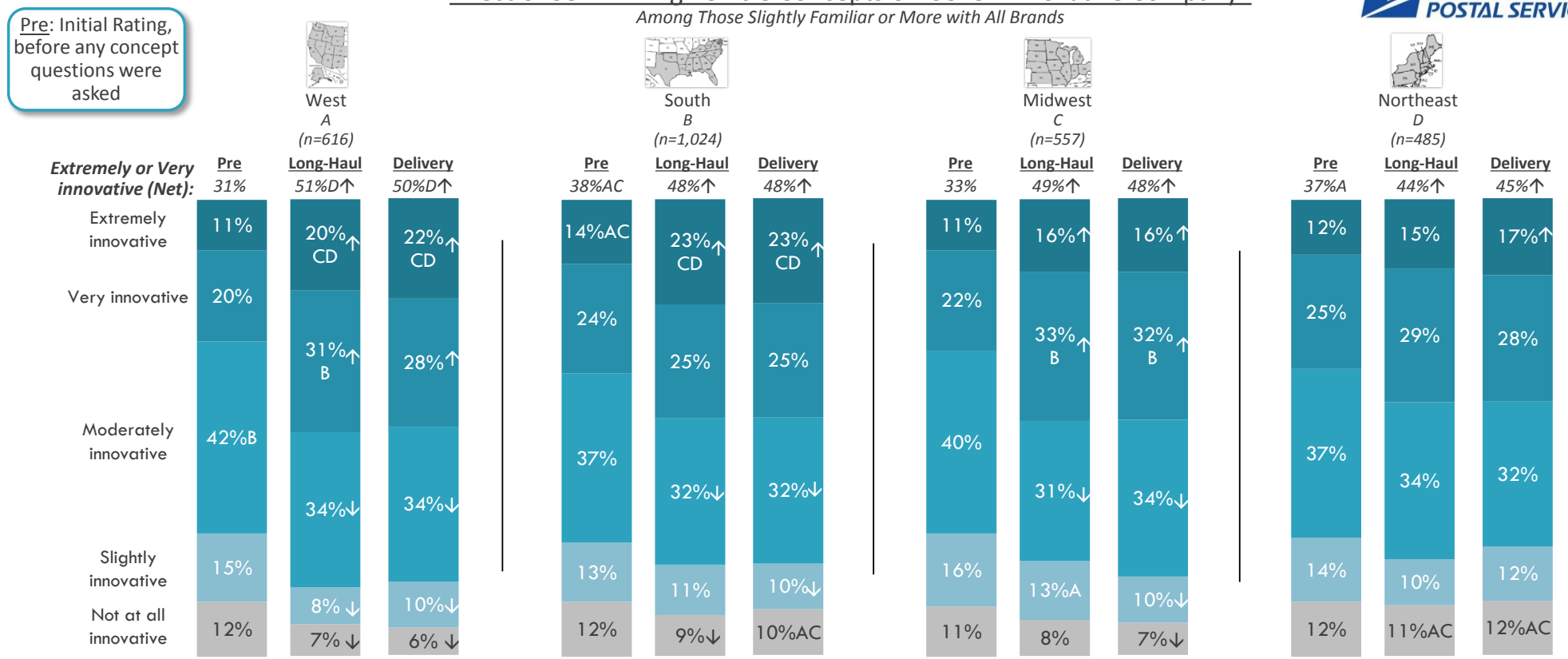
Findings presented are based on respondents slightly familiar or more with all brands at Q1. How familiar are you with the following organizations? | Question asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | B6. Please rank the following organizations from 1 to 4, where 1 is the organization you would most trust to use self-driving trucks for the delivery of mail or packages to their final destinations, and 4 is the organization you would least trust to use self-driving trucks for the delivery of mail or packages to their final destinations.

The use of self-driving technology could have a strong positive effect on USPS' image as an innovative company in every region. The positive effect is particularly strong in the West and South.

Effect of Self-Driving Vehicle Concepts on USPS "Innovative Company"

Among Those Slightly Familiar or More with All Brands

Pre: Initial Rating, before any concept questions were asked

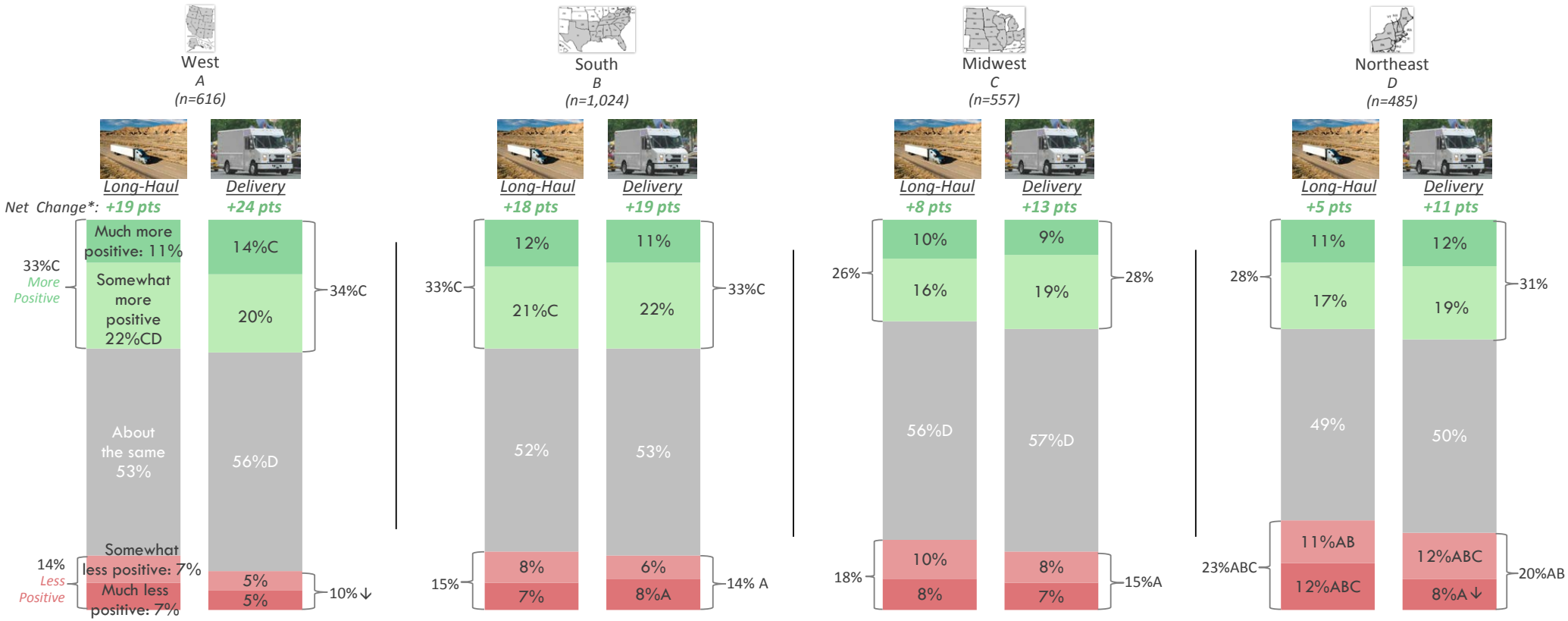


Q3 asked prior to exposure to descriptions of self-driving long-haul/delivery truck concepts, A/B8 asked following concept exposure. | Q3. Overall, how innovative do you feel the following organizations are? | A/B8. How innovative would you feel that the following organizations were if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | A,B,C: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

The use of self-driving technology could boost USPS' brand positivity in every region — particularly in the West and South.

Effect of Self-Driving Delivery Concepts on USPS Brand Positivity

Among Slightly Familiar or More with All Brands



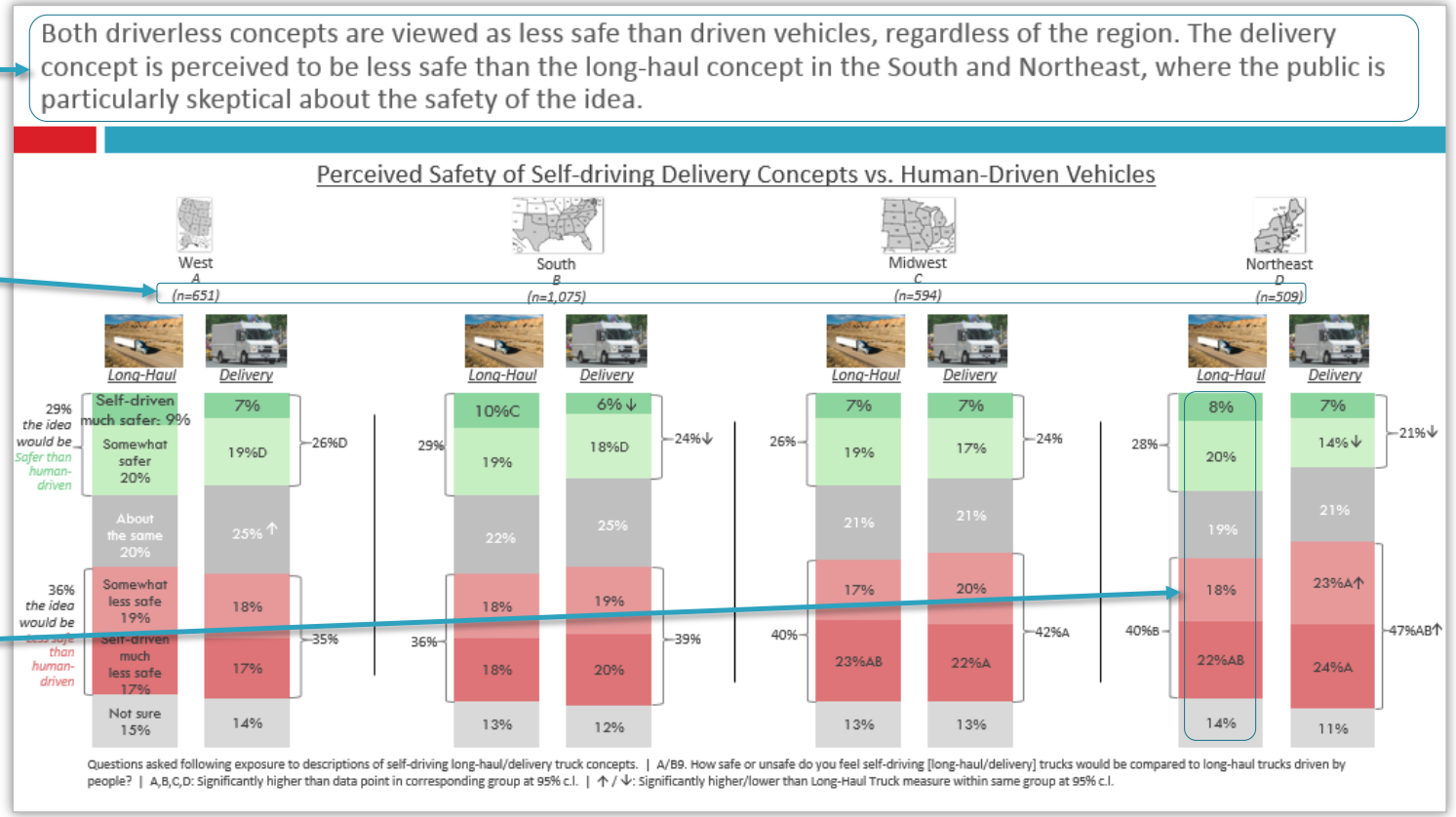
Questions asked following exposure to descriptions of self-driving long-haul/delivery truck concepts. | A/B7. Would your overall impression of the following organizations be more or less positive if you knew that they would be using self-driving trucks for the [highway portion of the long trips between warehouses/delivery of mail or packages to their final destinations]? | *Net Change = (More Positive – Less Positive). | A,B,C,D: Significantly higher than data point in corresponding group at 95% c.l. | ↑ / ↓: Significantly higher/lower than pre measure within same group at 95% c.l.

Appendix A

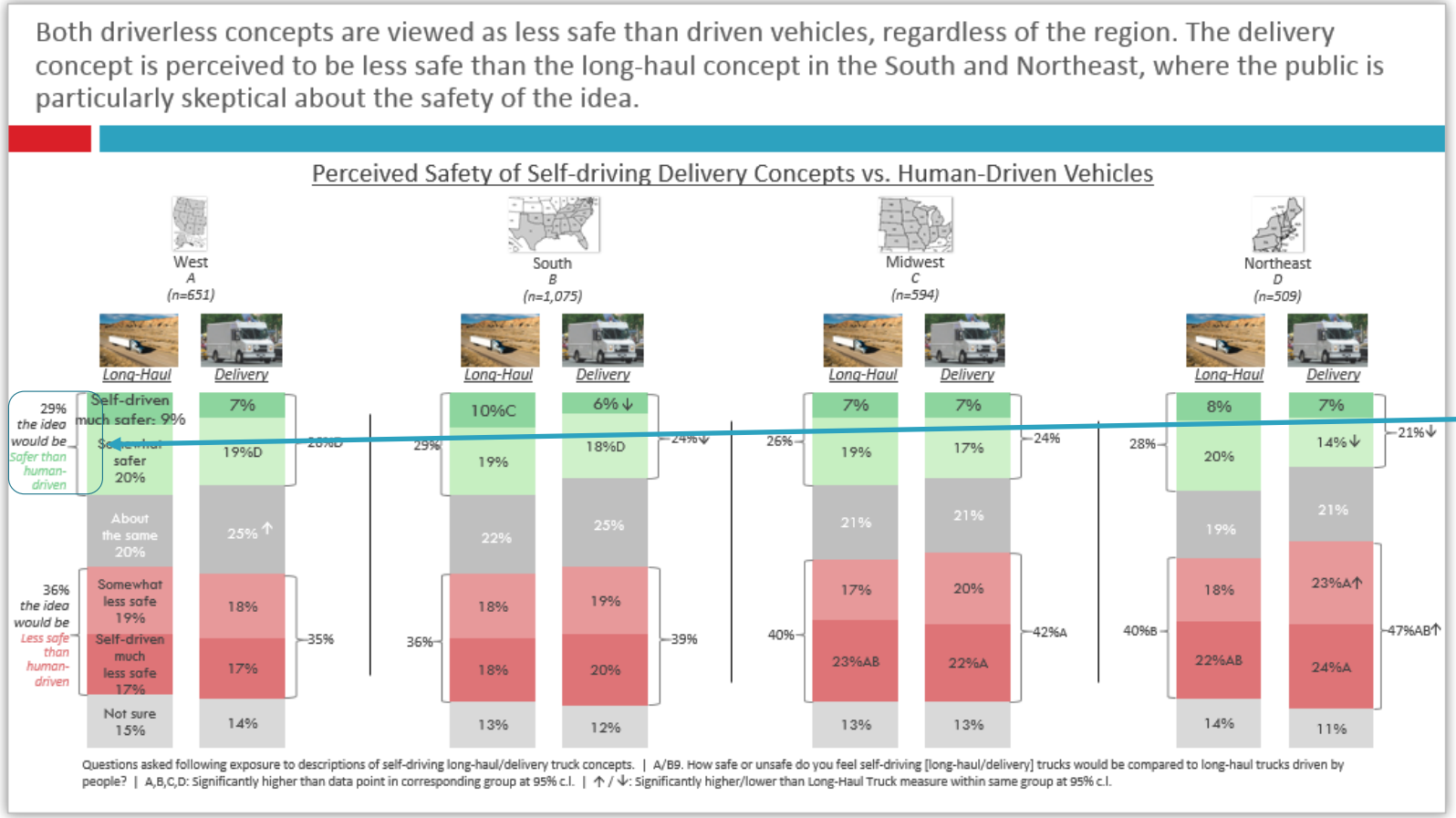
Guide to Interpreting the Detailed Data Visualizations in this Report

VISUAL ELEMENTS INCLUDED WHEN PRESENTING DETAILED DATA

- Findings are presented at the top of each slide and are written in a way that should be understandable for non-technical audiences.
- The number of respondents — shown as "(n=)" — is included for all groups.
- The numbers shown in certain charts may not add up to 100 percent, which is due to rounding.
  - *For example, the numbers presented here sum to 101 percent (8% + 20% + 19% + 18% + 22% + 14%).*



UNDERSTANDING "NETTED" DATA

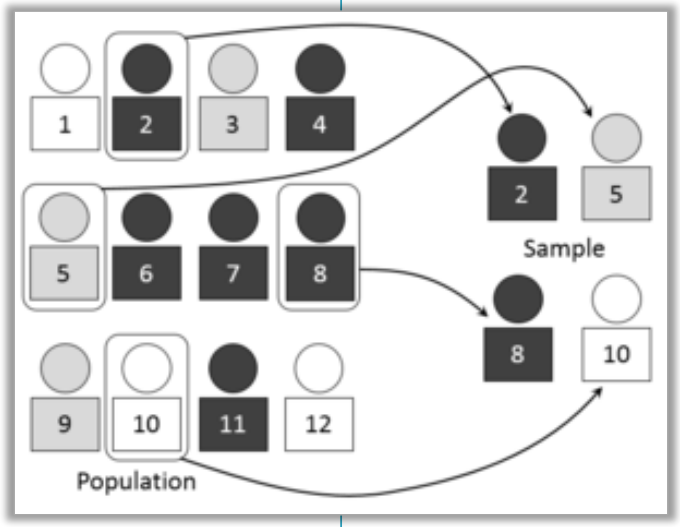


- On many slides, data are presented in "nets," where respondents' selection of any combination of response items within an overarching category is counted as one selection when calculating the percentage of people who selected the "netted" category.
  - *For example, respondents that reported that they believed self-driving vehicles would be "much" or "somewhat" safer than human-driven vehicles were combined here to show that 29 percent of those in the West feel that self-driving long-haul trucks would be safer than human-driven vehicles.*
- Note: Netted data is presented in several ways. It might be shown next to a bracket, as in this example slide, or the netted items might be boxed within a graph, or a net might be included on its own row at the top of a graph.

AN OVERVIEW OF INTERPRETING STATISTICAL SIGNIFICANCE

Numbers, such as percentages, that are derived from a sample can only provide estimates of the true number that exists in a population. Differences in opinion between two reported groups might be due to random variation, or might be due to a true difference of opinion between the groups.

In order to help interpret the numbers reported from a sample, it is common to perform "statistical significance testing" to determine the probability that the difference between two percentages observed in the sample would have occurred by chance if the population proportions were equal.



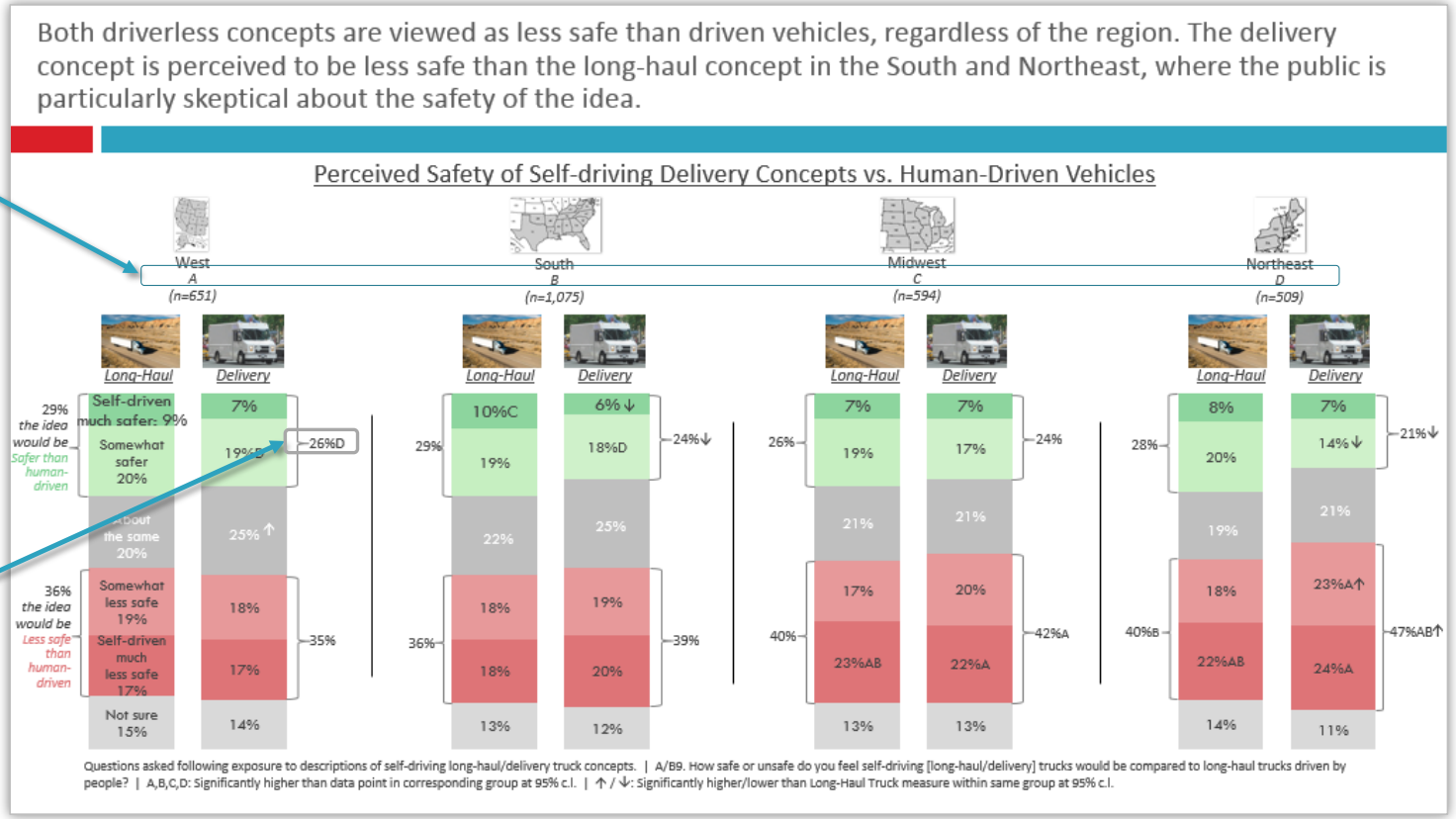
Statistical significance is calculated using "confidence levels," referred to as "c.l." throughout this report. Higher confidence levels provide analysts with greater certainty about the conclusions drawn from data. Data in this report use a 95 percent confidence level, which is commonly used in academic and government survey research.

When two numbers are different at the confidence threshold that was used, they are said to be "significantly different."

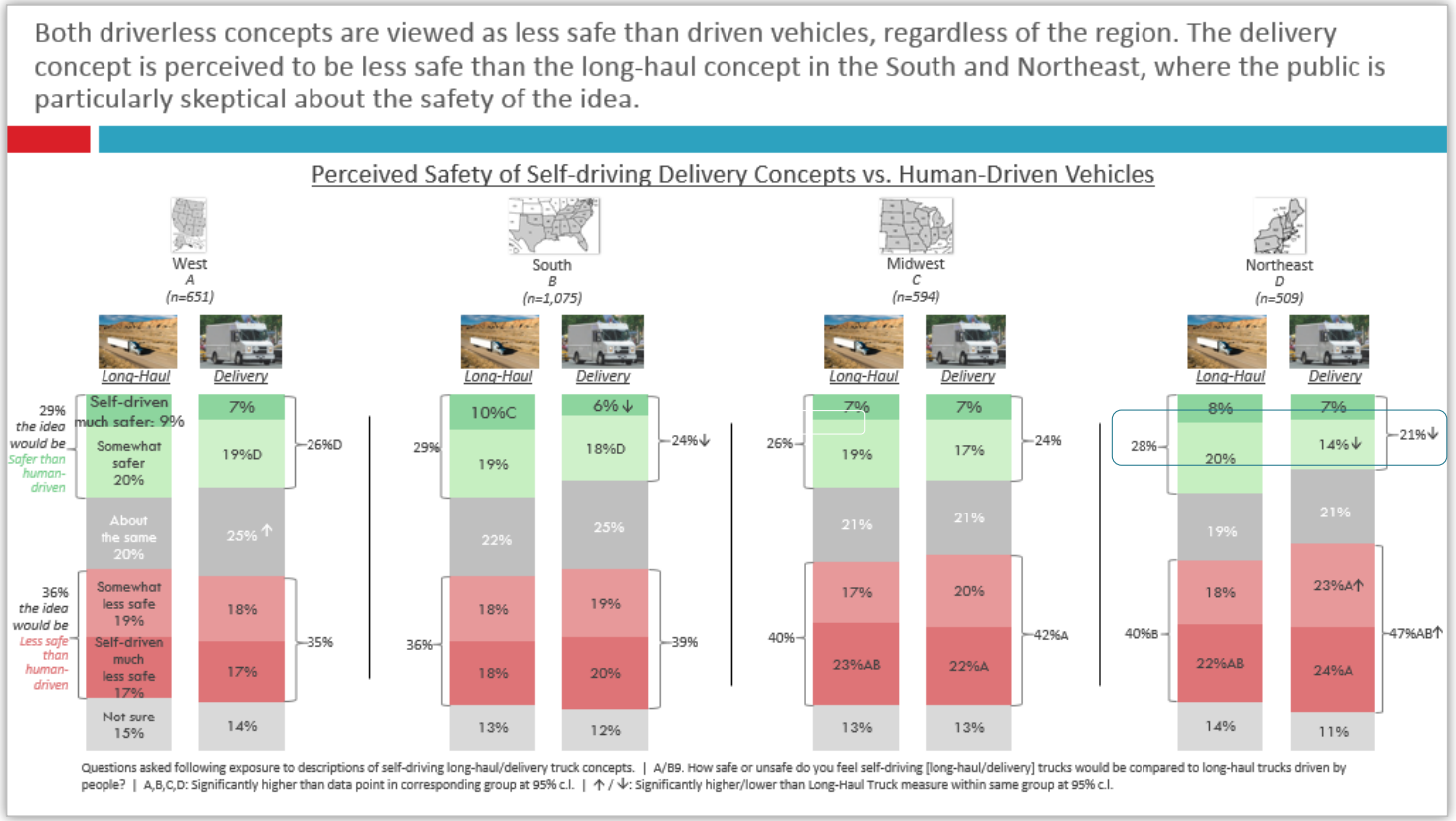
While it is still possible that the differences between two tested numbers could be due to chance, or due to the other issues that are discussed in Appendix B of this report, differences of opinion between groups whose results are "significantly different" meet a higher, more credible standard than differences that do not pass significance testing.

UNDERSTANDING STATISTICAL SIGNIFICANCE AS REPORTED WITH LETTER NOTATION

- When tests were employed in order to determine whether the difference between two numbers was statistically significant, visual elements, such as the letter notations (A,B,C) shown in this example slide, are assigned to the groups whose results were being reported.
- In cases where the difference between two numbers is statistically significant, a letter is placed next to the larger of the two numbers.
  - *For example, the "D" shown here indicates that the 26 percent of those in the West that think self-driving delivery trucks would be safer than human-driven delivery trucks is "significantly higher" than the 21 percent reported among those in the Northeast.*



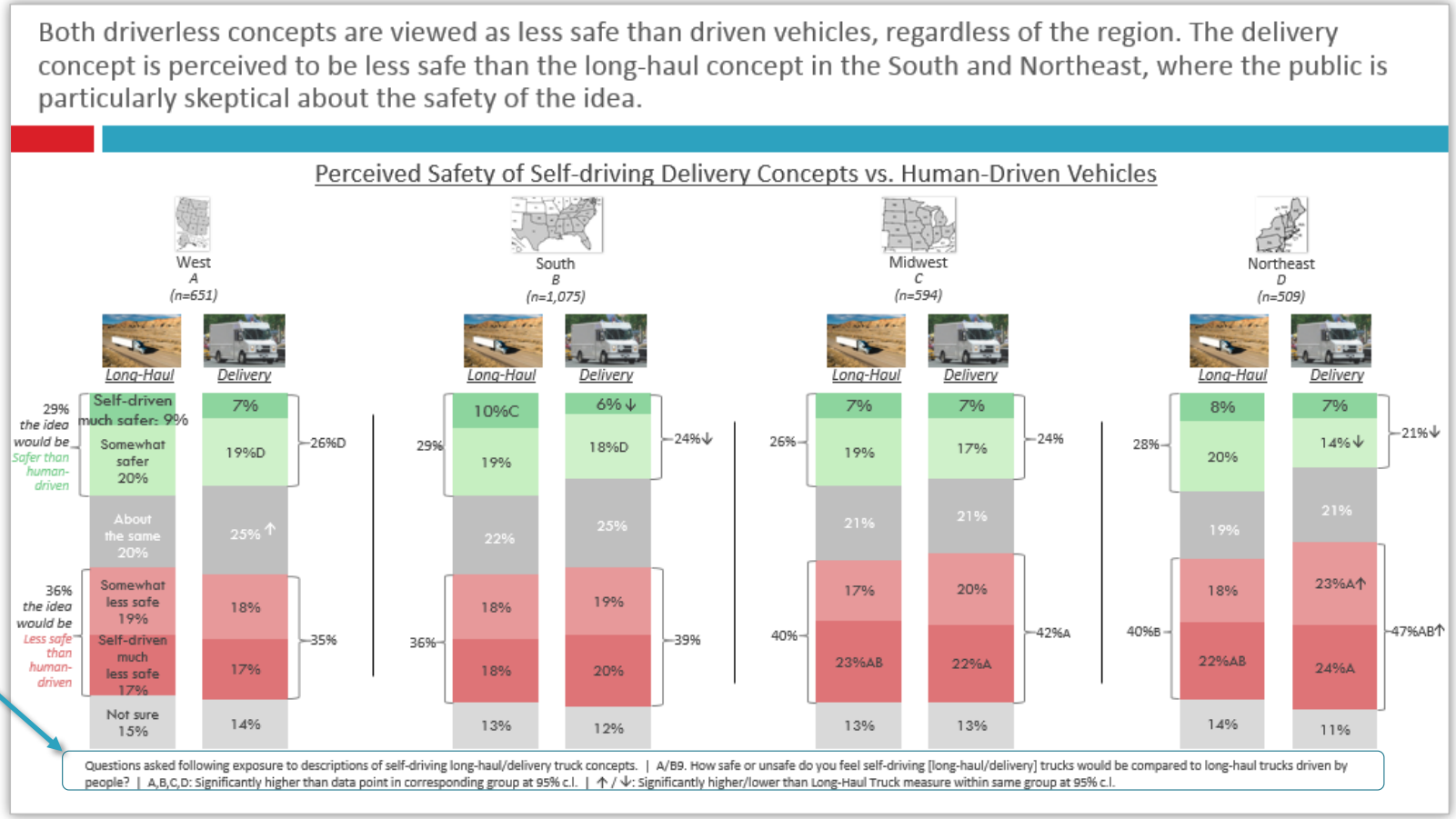
UNDERSTANDING STATISTICAL SIGNIFICANCE AS REPORTED WITH ARROWS



- In other places, arrows (↑↓) are used to indicate statistically significant differences.
- In these cases, the direction of the arrow indicates whether the number shown is significantly higher or lower than the group against which the presented number is being tested.
  - *For example, the 21 percent of those in the Northeast that believe that self-driving delivery trucks would be safer than human-driven delivery trucks reported here is "significantly lower" than the 28 percent reported regarding long-haul trucks in the same group.*

REPORT FOOTNOTES

- Footnotes are included on all data slides throughout the report. These include important details for both technical and non-technical audiences, such as complete question text, and specifications for any statistical testing performed.
  - *Footnotes are the first place to look for most of the questions that readers might have about each individual slide.*



Appendix B

Links to Additional Reporting

Links to Additional Reporting

The content of this survey's reporting is divided across three separate products. Each product has been designed to be readable as a stand-alone report, and can be accessed through the links below:

- Those with interest in national findings on the research topic should focus on the Summary Report:
  - https://www.uspsoig.gov/sites/default/files/document-library-files/2017/RARC-WP-17-011.pdf
- Those with interest in in-depth reporting for several relevant subgroups should also review the Detailed Subgroup Findings Report.
  - https://www.uspsoig.gov/sites/default/files/document-library-files/2017/RARC-WP-17-011-A.pdf
- Those interested in the technical details surrounding the collection of the data used for this project should review the Methodology Report.
  - https://www.uspsoig.gov/sites/default/files/document-library-files/2017/RARC-WP-17-011-B.pdf

Appendix C

External Review Certification

Chase H. Harrison Ph.D.
Somerville, MA 02143

United States Postal Service Office of Inspector General (OIG)
Risk Analysis Research Center
1735 N Lynn St
Arlington, VA 22209

July 18, 2017

To Whom It May Concern;

I certify that I have reviewed the survey methodology and reporting for the USPS OIG's paper regarding public perception of the use of self-driving technology for long-haul trucking and last-mile delivery.

I am confident that this report and its underlying methodology meet the professional standards typically employed for online opt-in market and survey research, and that researchers have provided the documentation required by the American Association for Public Opinion Research's guidelines for public disclosure.

Sincerely,

Chase H. Harrison, Ph.D.

Appendix D

Management's Comments

KEVIN L. MCADAMS
VICE PRESIDENT, DELIVERY OPERATIONS

UNITED STATES POSTAL SERVICE

August 28, 2017

PAOLA PISCIONERI
DIRECTOR, GLOBAL AND DIGITAL
RARC, USPS OIG

SUBJECT: Public Perception of Self-Driving Vehicles for Logistics
(Project Number 2017RARC003)

Thank you for providing the Postal Service with an opportunity to review and comment on this report. The growing activities surrounding autonomous vehicles is very stimulating and as you note may some day provide the ability to incorporate self driving vehicles into our operations.

Your survey and analysis of the public's perception of self driving technology for long-haul trucking and last mile delivery reveals interesting facts about the differences in millennium's, Generation X and Baby Boomers opinions. We are also aware the perception may change over time as this technology expands into different markets and public interation becomes more frequent.

The potential positive effect on the USPS image as an innovative company in every region is intriguing and something to be considered in our future investments as we find ways to deliver our brand.

Kevin L. McAdams

cc: CARM

475 L'ENFANT PLAZA SW
WASHINGTON, DC 20260-1600
202-268-6500
FAX 202-268-3331
WWW.USPS.COM

POINTS OF CONTACT

Research Methodology Point of Contact
For any additional information regarding this project's methodology, please contact:

Email: SurveyResearch@uspsoig.gov

Phone: 703-248-7833

Mail:
United States Postal Service Office of Inspector General (OIG)
Risk Analysis Research Center
1735 N. Lynn St.
Arlington, VA 22209

Media or General Inquiries Point of Contact
For any other inquiries regarding this project, please contact Agapi Doulaveris:

Email: adoulaveris@uspsoig.gov

Phone: 703-248-2286